SEQUENCE LISTING

<110> Washington State University Research Foundation
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Schoendorf, Anne
Wildung, Mark R

<120> NUCLEIC ACID MOLECULES ENCODING 10-DEACETYLBACCATIN III O ACETYL TRANSFERASE AND RELATED PRODUCTS

<130> 4630-59094

<140> US 09/866,570
<141> 2001-05-25

<150> US 09/457,046
<151> 1999-12-07

<150> US 09/411,145
<151> 1999-09-30

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<170> PatentIn version 3.1

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gcccaatttc ttaaaggttt ggcagaaatg gcacggggag aggttaagct ctcattggaa 360

ccaatatgga atatggaact agtgaagctt gatgacccta aatacctcca atttttcac 420

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caagacctct taagtggatc tcttttgcgt gctataatga ttataaagaa atcaaaggtc 780

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Glu Ala Met Ala Asp Asn Glu Leu Ser Val Leu Gly Asp Phe Asp Asp
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Ser Asn Pro Ser Phe Gln Gln Leu Leu Phe Ser Leu Pro Leu Asp Thr
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Asn Phe Lys Asp Leu Ser Leu Leu Val Val Gln Val Thr Arg Phe Thr
65 70 75 80

Cys Gly Gly Phe Val Val Gly Val Ser Phe His His Gly Val Cys Asp
85 90 95

Gly Arg Gly Ala Ala Gln Phe Leu Lys Gly Leu Ala Glu Met Ala Arg
100 105 110

Gly Glu Val Lys Leu Ser Leu Glu Pro Ile Trp Asn Met Glu Leu Val
115 120 125

Lys Leu Asp Asp Pro Lys Tyr Leu Gln Phe Phe His Phe Glu Phe Leu
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Arg Ala Pro Ser Ile Val Glu Lys Ile Val Gln Thr Tyr Phe Ile Ile
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Asp Leu Glu Thr Ile Asn Tyr Ile Lys Gln Ser Val Met Glu Glu Cys
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180 185 190

Ala Arg Thr Arg Ala Phe Gln Ile Pro Glu Ser Glu Tyr Val Lys Ile
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Leu Phe Gly Met Asp Met Arg Asn Ser Phe Asn Pro Pro Leu Pro Ser
210 215 220

Gly Tyr Tyr Gly Asn Ser Ile Gly Thr Ala Cys Ala Val Asp Asn Val
225 230 235 240

Gln Asp Leu Leu Ser Gly Ser Leu Leu Arg Ala Ile Met Ile Ile Lys
245 250 255

Lys Ser Lys Val Ser Leu Asn Asp Asn Phe Lys Ser Arg Ala Val Val
260 265 270

Lys Pro Ser Glu Leu Asp Val Asn Met Asn His Glu Asn Val Val Ala
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Cys Gly Gly Phe Val Val Gly Thr Arg Phe His His Ser Val Ser Asp
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Gly Lys Gly Ile Gly Gln Leu Leu Lys Gly Met Gly Glu Met Ala Arg
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Gly Glu Phe Lys Pro Ser Leu Glu Pro Ile Trp Asn Arg Glu Met Val
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His Pro Pro Leu Asn Leu Glu Lys Ser Ile Gln Ala Ser Met Val Ile
145 150 155 160

Ser Leu Glu Arg Ile Asn Tyr Ile Lys Arg Cys Met Met Glu Glu Cys
165 170 175

Lys Glu Phe Phe Ser Ala Phe Glu Val Val Val Ala Leu Ile Trp Leu
180 185 190

Ala Arg Thr Lys Ser Phe Arg Ile Pro Pro Asn Glu Tyr Val Lys Ile
195 200 205

Ile Phe Pro Ile Asp Met Arg Asn Ser Phe Asp Ser Pro Leu Pro Lys
210 215 220

Gly Tyr Tyr Gly Asn Ala Ile Gly Asn Ala Cys Ala Met Asp Asn Val
225 230 235 240

Lys Asp Leu Leu Asn Gly Ser Leu Leu Tyr Ala Leu Met Leu Ile Lys
245 250 255

Lys Ser Lys Phe Ala Leu Asn Glu Asn Phe Lys Ser Arg Ile Leu Thr
260 265 270

Lys Pro Ser Ala Leu Asp Ala Asn Met Lys His Glu Asn Val Val Gly
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Gly Lys
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35 40 45

Phe Gln Gln Leu Ile Phe Ser Leu Pro Gln Asp Thr Asp Ile Glu Asp
50 55 60

Leu His Leu Leu Ile Val Gln Val Thr Arg Phe Thr Cys Gly Gly Phe
65 70 75 80

Val Val Gly Ala Asn Val Tyr Ser Ser Val Cys Asp Ala Lys Gly Phe
85 90 95

Gly Gln Phe Leu Gln Gly Met Ala Glu Met Ala Arg Gly Glu Val Lys
100 105 110

Pro Ser Ile Glu Pro Ile Trp Asn Arg Glu Leu Val Lys Pro Glu His
115 120 125

Cys Met Pro Phe Arg Met Ser His Leu Gln Ile Ile His Ala Pro Leu
130 135 140

Ile Glu Glu Lys Phe Val Gln Thr Ser Leu Val Ile Asn Phe Glu Ile
145 150 155 160

Ile Asn His Ile Arg Gln Arg Ile Met Glu Glu Cys Lys Glu Ser Phe
165 170 175

Ser Ser Phe Glu Ile Val Ala Ala Leu Val Trp Leu Ala Lys Ile Lys
180 185 190

Ala Phe Gln Ile Pro His Ser Glu Asn Val Lys Leu Leu Phe Ala Met
195 200 205

Asp Leu Arg Arg Ser Phe Asn Pro Pro Leu Pro His Gly Tyr Tyr Gly
210 215 220

Asn Ala Phe Gly Ile Ala Cys Ala Met Asp Asn Val His Asp Leu Leu
225 230 235 240

Ser Gly Ser Leu Leu Arg Ala Ile Met Ile Ile Lys Lys Ser Lys Phe
245 250 255

Ser Leu His Lys Glu Leu Asn Ser Lys Thr Val Met Ser Pro Ser Val
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Phe Gln Gln Leu Leu Phe Ser Leu Pro Gln Asp Thr Asp Ile Glu Asp
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Leu His Leu Leu Ile Val Gln Val Thr His Phe Thr Cys Gly Asp Phe
65 70 75 80

Val Val Gly Ala Asn Val Tyr Gly Ser Val Cys Asp Gly Lys Gly Phe
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Gly Gln Phe Leu Gln Gly Met Ala Glu Met Ala Arg Gly Glu Val Lys
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Pro Ser Ile Glu Pro Ile Trp Asn Arg Glu Leu Val Lys Pro Glu Asp
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Ile Glu Glu Lys Phe Val Gln Thr Ser Leu Val Ile Asn Phe Glu Ile
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Ile Asn His Ile Arg Arg Cys Ile Met Glu Glu Cys Lys Glu Ser Phe
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Ala Phe Arg Ile Pro His Ser Glu Asn Val Lys Ile Leu Phe Ala Met
195 200 205

Asp Val Arg Arg Ser Phe Lys Pro Pro Leu Pro Lys Gly Tyr Tyr Gly
210 215 220

Asn Ala Tyr Gly Ile Ala Cys Ala Met Asp Asn Val Gln Asp Leu Leu
225 230 235 240

Ser Gly Ser Leu Leu His Ala Ile Met Ile Ile Lys Lys Ser Lys Phe
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Ser Leu His Lys Lys Ile Asn Ser Lys Thr Val Met Ser Pro Ser Pro
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35 40 45

Phe Arg Gln Leu Gln Ser Thr Leu Pro Leu Asp Thr Asp Cys Lys Asp
50 55 60

Leu His Leu Met Thr Val Gln Val Thr Arg Phe Thr Cys Gly Gly Phe
65 70 75 80

Val Met Gly Thr Ser Val His Gln Ser Ile Cys Asp Gly Asn Gly Leu
85 90 95

Gly Gln Phe Phe Lys Ser Met Ala Glu Met Val Arg Gly Glu Val Lys
100 105 110

Pro Ser Ile Glu Pro Val Trp Asn Arg Glu Leu Val Lys Pro Glu Asp
115 120 125

Tyr Ile His Leu Gln Leu Tyr Ile Gly Glu Phe Ile Arg Pro Pro Leu
130 135 140

Ala Phe Glu Lys Val Gly Gln Thr Ser Leu Ile Ile Ser Phe Glu Lys
145 150 155 160

Ile Asn His Ile Lys Arg Cys Ile Met Glu Glu Ser Lys Glu Ser Phe
165 170 175

Ser Ser Phe Glu Ile Val Thr Ala Leu Val Trp Leu Ala Arg Thr Arg
180 185 190

Ala Phe Gln Ile Pro His Asn Glu Asp Val Thr Leu Leu Leu Ala Met
195 200 205

Asp Ala Arg Arg Ser Phe Asp Pro Pro Ile Pro Lys Gly Tyr Tyr Gly
210 215 220

Asn Val Ile Gly Thr Ala Cys Ala Thr Asn Asn Val His Asn Leu Leu
225 230 235 240

Ser Gly Ser Leu Leu His Ala Leu Thr Ile Ile Lys Lys Ser Met Ser
245 250 255

Ser Phe Tyr Glu Asn Ile Thr Ser Arg Val Leu Val Asn Pro Ser Thr
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35 40 45

Leu Glu Gln Leu Leu Phe Cys Leu Pro Pro Asp Thr Asp Ile Glu Asp
50 55 60

Ile His Pro Leu Val Val Gln Val Thr Arg Phe Thr Cys Gly Gly Phe
65 70 75 80

Val Val Gly Val Ser Phe Cys His Gly Ile Cys Asp Gly Leu Gly Ala
85 90 95

Gly Gln Phe Leu Ile Ala Met Gly Glu Met Ala Arg Gly Glu Ile Lys
100 105 110

Pro Ser Ser Glu Pro Ile Trp Lys Arg Glu Leu Leu Lys Pro Glu Asp
115 120 125

Pro Leu Tyr Arg Phe Gln Tyr Tyr His Phe Gln Leu Ile Cys Pro Pro
130 135 140

Ser Thr Phe Gly Lys Ile Val Gln Gly Ser Leu Val Ile Thr Ser Glu
145 150 155 160

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Met Asp Met Arg Lys Leu Phe Asn Pro Pro Leu Ser Lys Gly Tyr Tyr
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Gly Asn Phe Val Gly Thr Val Cys Ala Met Asp Asn Val Lys Asp Leu
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Leu Ser Gly Ser Leu Leu Arg Val Val Arg Ile Ile Lys Lys Ala Lys
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Val Ser Leu Asn Glu His Phe Thr Ser Thr Ile Val Thr Pro Arg Ser
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aagagaactg gtgaagctag aagagaggtt aagccctcga ttgaaccgat atggaataag    420
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35 40 45

Phe Gln Gln Leu Ile Phe Ser Leu Pro Gln Asp Thr Asp Ile Glu Asp
50 55 60

Leu His Leu Leu Ile Val Gln Val Thr Arg Phe Thr Cys Gly Gly Phe
65 70 75 80

Val Val Gly Ala Asn Val Tyr Gly Ser Thr Cys Asp Ala Lys Gly Phe
85 90 95

Gly Gln Phe Leu Gln Gly Met Ala Glu Met Ala Arg Gly Glu Val Lys
100 105 110

Pro Ser Ile Glu Pro Ile Trp Asn Lys Arg Thr Gly Glu Ala Arg Arg

115 120 125

Glu Val Lys Pro Ser Ile Glu Pro Ile Trp Asn Lys Arg Thr Gly Glu
130 135 140

Ala Arg Arg Leu Tyr Ala Leu Ser Gly Met Ser His Leu Gln Ile Ile
145 150 155 160

His Ala Pro Val Ile Glu Glu Lys Phe Val Gln Thr Ser Leu Val Ile
165 170 175

Asn Phe Glu Ile Ile Asn His Ile Arg Arg Arg Ile Met Glu Glu Cys
180 185 190

Lys Glu Ser Leu Ser Ser Phe Glu Ile Val Ala Ala Leu Val Trp Leu
195 200 205

Ala Lys Ile Lys Ala Phe Gln Ile Pro His Ser Glu Asn Val Lys Leu
210 215 220

Leu Phe Ala Met Asp Leu Arg Arg Ser Phe Asn Pro Pro Leu Pro His
225 230 235 240

Gly Tyr Tyr Gly Asn Ala Phe Gly Ile Ala Cys Ala Met Asp Asn Val
245 250 255

His Asp Leu Leu Ser Gly Ser Leu Leu Arg Thr Ile Met Ile Ile Lys
260 265 270

Lys Ser Lys Phe Ser Leu His Lys Glu Leu Asn Ser Lys Thr Val Met
275 280 285

Ser Ser Ser Val Val Asp Val Asn Thr Lys Phe Glu Asp Val Val Ser
290 295 300

Ile Ser Asp Trp Arg His Ser Ile Tyr Tyr Glu Val Asp Phe Gly Trp
305 310 315 320

Gly Lys

<210> 15
<211> 908

<212> DNA
<213> Taxus cuspidata

<400> 15
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acaggggagg gtgctgtgtt tgtggaagcc atggcggaca cagatctttc ttccttggga 120

gatttggatg ctcataatcc ttcatttcac cagctttctg tttcacctcc agtggattct 180

gatattgagg gcctccatct tgcagctctt caggtaactc gttttacatg tgggggtttt 240

gttctaggag taagtttgaa ccaaagtgtg tgcgatggaa aaggattggg aaattttctt 300

aaaggtgtgg cagagatggt gaggggaaaa gataagccct caattgaacc agtatggaat 360

agagaaatgg taaagtttga agactataca cgcctccaat tttatcacca tgaattcata 420

caaccacctt taatagatga gaaaattgtt caaaaatctc ttgttataaa cttggagaca 480

ataaatatta tcaaacgatg tattatggaa gaatatacaa aatttttctc tacattcgaa 540

atcgtagcag caatggtttg gctagcaaga acaaaagctt tcaaaattcc acatagtgaa 600

aatgcagagc ttctctttac aatggatatg agggaatcat ttaatccccc tcttccaaag 660

ggatactatg gtaatgttat gggtatagta tgtgcattgg ataatgtcaa acacctatta 720

agtggatcta ttttgcgtgc tgcaatggtt atacagaaat caaggttttt ctttacagag 780

aatttccggt taagatctat gacacaacca tctgcattga ctgtgaagat caagcacaaa 840

aatgtagttg catgtagtga ttggaggcaa tatggatatg atgaagtgga cttcggctgg 900

ggtaaacc 908

<210> 16
<211> 302
<212> PRT
<213> Taxus cuspidata

<400> 16

Phe Tyr Pro Phe Ala Gly Arg Leu Arg Asn Lys Glu Asn Gly Asp Leu
1 5 10 15

Glu Val Glu Cys Thr Gly Glu Gly Ala Val Phe Val Glu Ala Met Ala
20 25 30

Asp Thr Asp Leu Ser Ser Leu Gly Asp Leu Asp Ala His Asn Pro Ser
35 40 45

Phe His Gln Leu Ser Val Ser Pro Pro Val Asp Ser Asp Ile Glu Gly

50 55 60

Leu His Leu Ala Ala Leu Gln Val Thr Arg Phe Thr Cys Gly Gly Phe
65 70 75 80

Val Leu Gly Val Ser Leu Asn Gln Ser Val Cys Asp Gly Lys Gly Leu
85 90 95

Gly Asn Phe Leu Lys Gly Val Ala Glu Met Val Arg Gly Lys Asp Lys
100 105 110

Pro Ser Ile Glu Pro Val Trp Asn Arg Glu Met Val Lys Phe Glu Asp
115 120 125

Tyr Thr Arg Leu Gln Phe Tyr His His Glu Phe Ile Gln Pro Pro Leu
130 135 140

Ile Asp Glu Lys Ile Val Gln Lys Ser Leu Val Ile Asn Leu Glu Thr
145 150 155 160

Ile Asn Ile Ile Lys Arg Cys Ile Met Glu Glu Tyr Thr Lys Phe Phe
165 170 175

Ser Thr Phe Glu Ile Val Ala Ala Met Val Trp Leu Ala Arg Thr Lys
180 185 190

Ala Phe Lys Ile Pro His Ser Glu Asn Ala Glu Leu Leu Phe Thr Met
195 200 205

Asp Met Arg Glu Ser Phe Asn Pro Pro Leu Pro Lys Gly Tyr Tyr Gly
210 215 220

Asn Val Met Gly Ile Val Cys Ala Leu Asp Asn Val Lys His Leu Leu
225 230 235 240

Ser Gly Ser Ile Leu Arg Ala Ala Met Val Ile Gln Lys Ser Arg Phe
245 250 255

Phe Phe Thr Glu Asn Phe Arg Leu Arg Ser Met Thr Gln Pro Ser Ala
260 265 270

Leu Thr Val Lys Ile Lys His Lys Asn Val Val Ala Cys Ser Asp Trp
275 280 285

Arg Gln Tyr Gly Tyr Asp Glu Val Asp Phe Gly Trp Gly Lys
290 295 300

<210> 17
<211> 908
<212> DNA
<213> Taxus cuspidata

<400> 17
ttctacccgt ttgcggggcg gatgagaaac aaaggagatg gggaactgga agtggattgc 60

acgggggaag gtgctctgtt tgtagaagcc atggcggacg acaacctttc agtgttggga 120

ggttttgatt accacaatcc agcatttggg aagctacttt actcactacc actggatacc 180

cctattcacg acctccatcc tctggttgtt caggtaactc gttttacctg cgggggttt 240

gttgtgggat taagtttgga ccatactata tgtgatggac gtggtgcagg tcaatttctt 300

aaagccctag cagaratggc gaggggagag gctaagccct cattggaacc aatatggaat 360

agagagttgt tgaagcccga agaccttata cgcctgcaat tttatcactt tgaatcgatg 420

cgtccacctc caatagttga agaaatggtt caatcatcta ttattataaa tgctgagaca 480

ataagtaata tsaaacaata cattatggaa gaatgtaaag aatcttgttc tgcatttgat 540

gtcgtaggag gattggcttg gctagccagg acaaaggctt ttcaaattcc acatacagag 600

aatgtgatgg ttatttttgc agtggatgcg aggagatcat ttgatccacc acttccaaag 660

ggttactatg gtaatgtcgt tggtaatgca tgtgcattgg ataatgttca agacctctta 720

aatggatctc ttttgcgtgc tacaatgatt ataaagaaat caaaggtatc tttaaaagag 780

aatataaggg caaaaacttt gacgatacca tctatagtag atgtgaatgt gaaacatgaa 840

aacatagttg gattaggcga tttgagacga ctgggattta atgaagtgga cttcggctgg 900

ggsaagcc 908

<210> 18
<211> 302
<212> PRT
<213> Taxus cuspidata

<220>
<221> VARIANT
<222> (164)..(164)
<223> Xaa = any amino acid

<400> 18

Phe Tyr Pro Phe Ala Gly Arg Met Arg Asn Lys Gly Asp Gly Glu Leu
1 5 10 15

Glu Val Asp Cys Thr Gly Glu Gly Ala Leu Phe Val Glu Ala Met Ala
20 25 30

Asp Asp Asn Leu Ser Val Leu Gly Gly Phe Asp Tyr His Asn Pro Ala
35 40 45

Phe Gly Lys Leu Leu Tyr Ser Leu Pro Leu Asp Thr Pro Ile His Asp
50 55 60

Leu His Pro Leu Val Val Gln Val Thr Arg Phe Thr Cys Gly Gly Phe
65 70 75 80

Val Val Gly Leu Ser Leu Asp His Thr Ile Cys Asp Gly Arg Gly Ala
85 90 95

Gly Gln Phe Leu Lys Ala Leu Ala Glu Met Ala Arg Gly Glu Ala Lys
100 105 110

Pro Ser Leu Glu Pro Ile Met Asn Arg Glu Leu Leu Lys Pro Glu Asp
115 120 125

Leu Ile Arg Leu Gln Phe Tyr His Phe Glu Ser Met Arg Pro Pro Pro
130 135 140

Ile Val Glu Glu Met Val Gln Ser Ser Ile Ile Ile Asn Ala Glu Thr
145 150 155 160

Ile Ser Asn Xaa Lys Gln Tyr Ile Met Glu Glu Cys Lys Glu Ser Cys
165 170 175

Ser Ala Phe Asp Val Val Gly Gly Leu Ala Met Leu Ala Arg Thr Lys
180 185 190

Ala Phe Gln Ile Pro His Thr Glu Asn Val Met Val Ile Phe Ala Val
195 200 205

Asp Ala Arg Arg Ser Phe Asp Pro Pro Leu Pro Lys Gly Tyr Tyr Gly
210 215 220

Asn Val Val Gly Asn Ala Cys Ala Leu Asp Asn Val Gln Asp Leu Leu
225 230 235 240

Asn Gly Ser Leu Leu Arg Ala Thr Met Ile Ile Lys Lys Ser Lys Val
245 250 255

Ser Leu Lys Glu Asn Ile Arg Ala Lys Thr Leu Thr Ile Pro Ser Ile
260 265 270

Val Asp Val Asn Val Lys His Glu Asn Ile Val Gly Leu Gly Asp Leu
275 280 285

Arg Arg Leu Gly Phe Asn Glu Val Asp Phe Gly Trp Gly Lys
290 295 300

<210> 19
<211> 911
<212> DNA
<213> Taxus cuspidata

<400> 19
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acaggggatg gtgctctgtt tgtggaagcc atggtggaag acaccatttc agtcttacga 120

gatctggatg acctcaatcc atcatttcag cagttagttt tttggcatcc attggacact 180

gctattgagg atcttcatct tgtgattgtt caggtaacac gttttacatg tgggggcatt 240

gccgttggag tgactttgcc ccatagtgta tgtgatggac gtggagcacc ccagtttgtt 300

acagcactgg cagaaatggc gaggggagag gttaagccct tattagaacc aatatggaat 360

agagaattgt tgaaccctga agaccctcta catctccagt taaatcaatt tgattcgata 420

tgcccacctc caatgctcga ggaattgggt caagcttctt ttgttataaa tgttgacacc 480

atagaatata tgaaacaatg tgttatggag gaatgtaatg atttttgttc gtcctttgaa 540

gtagtggcag cattggtttg gatagcaagg acaaaggctc ttcaaattcc acatactgag 600

aatgtgaagc ttctctttgc gatggatttg aggaaattat ttaatccccc acttccaaat 660

ggatattatg gtaatgccat tggtactgca tatgcaatgg ataatgtcca agacctctta 720

aatggatctc ttttgcgtgc tataatgatt ataaaaaaag caaaggctga tttaaaagat 780

aattattcga ggtcaagggt agttacaaac ccaaattcat tagatgtgaa caagaaatcc 840

aacaacattc ttgcattgag tgactggagg cggttgggat tttatgaagc cgattttggc 900

tggggcaagc c 911

<210> 20
<211> 303
<212> PRT
<213> Taxus cuspidata

<400> 20

Tyr Tyr Pro Leu Ala Gly Arg Leu Arg Ser Lys Glu Ile Gly Glu Leu
1 5 10 15

Glu Val Glu Cys Thr Gly Asp Gly Ala Leu Phe Val Glu Ala Met Val
20 25 30

Glu Asp Thr Ile Ser Val Leu Arg Asp Leu Asp Asp Leu Asn Pro Ser
35 40 45

Phe Gln Gln Leu Val Phe Trp His Pro Leu Asp Thr Ala Ile Glu Asp
50 55 60

Leu His Leu Val Ile Val Gln Val Thr Arg Phe Thr Cys Gly Gly Ile
65 70 75 80

Ala Val Gly Val Thr Leu Pro His Ser Val Cys Asp Gly Arg Gly Ala
85 90 95

Pro Gln Phe Val Thr Ala Leu Ala Glu Met Ala Arg Gly Glu Val Lys
100 105 110

Pro Leu Leu Glu Pro Ile Trp Asn Arg Glu Leu Leu Asn Pro Glu Asp
115 120 125

Pro Leu His Leu Gln Leu Asn Gln Phe Asp Ser Ile Cys Pro Pro Pro
130 135 140

Met Leu Glu Glu Leu Gly Gln Ala Ser Phe Val Ile Asn Val Asp Thr
145 150 155 160

Ile Glu Tyr Met Lys Gln Cys Val Met Glu Glu Cys Asn Asp Phe Cys
165 170 175

Ser Ser Phe Glu Val Val Ala Ala Leu Val Trp Ile Ala Arg Thr Lys
180 185 190

Ala Leu Gln Ile Pro His Thr Glu Asn Val Lys Leu Leu Phe Ala Met
195 200 205

Asp Leu Arg Lys Leu Phe Asn Pro Pro Leu Pro Asn Gly Tyr Tyr Gly
210 215 220

Asn Ala Ile Gly Thr Ala Tyr Ala Met Asp Asn Val Gln Asp Leu Leu
225 230 235 240

Asn Gly Ser Leu Leu Arg Ala Ile Met Ile Ile Lys Lys Ala Lys Ala
245 250 255

Asp Leu Lys Asp Asn Tyr Ser Arg Ser Arg Val Val Thr Asn Pro Asn
260 265 270

Ser Leu Asp Val Asn Lys Lys Ser Asn Asn Ile Leu Ala Leu Ser Asp
275 280 285

Trp Arg Arg Leu Gly Phe Tyr Glu Ala Asp Phe Gly Trp Gly Lys
290 295 300

<210> 21
<211> 911
<212> DNA
<213> Taxus cuspidata

<400> 21
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acaggggatg gtgctctgtt tgtggaagcc atggtggaag acaccatttc agtcttacga 120

gatctggatg acctcaatcc atcatttcag cagttagttt tttggcatcc attggacact 180

gctattgagg atcttcatct tgtgattgtt caggtaacac gttttacatg tgggggcatt 240

gccgttggag tgactttgcc ccatagtgta tgtgatggac gtggagcacc ccagtttgtt 300

acagcactgg cagaaatggc gaggggagag gttaagccct tattagaacc aatatggaat 360

agagaattgt tgaaccctga agaccctcta catctccagt taaatcaatt tgattcgata 420

tgcccacctc caatgctcga ggaattgggt caagcttctt ttgttataaa tgttgacacc 480

atagaatata tgaaacaatg tgttatggag gaatgtaatg atttttgttc gtcctttgaa 540

gtagtggcag cattggtttg gatagcaagg acaaaggctc ttcaaattcc acatactgag 600

aatgtgaagc ttctctttgc gatggatttg aggaaattat ttaatccccc acttccaaat 660

ggatattatg gtaatgccat tggtactgca tatgcaatgg ataatgtcca agacctctta 720

aatggatctc ttttgcgtgc tataatgatt ataaaaaaag caaaggctga tttaaaagat 780

aattattcga ggtcaagggt agttacaaac ccaaattcat tagatgtgaa caagaaatcc 840

aacaacattc ttgcattgag tgactggagg cggttgggat tttatgaagc cgattttggc 900

tggggcaagc c 911

<210> 22
<211> 306
<212> PRT
<213> Taxus cuspidata

<400> 22

Tyr Tyr Pro Leu Ala Gly Arg Leu Glu Thr Cys Asp Gly Met Val Tyr
1 5 10 15

Ile Asp Cys Asn Asp Lys Gly Ala Glu Phe Ile Glu Ala Tyr Ala Ser
20 25 30

Pro Glu Leu Gly Val Ala Glu Ile Met Ala Asp Ser Phe Pro His Gln
35 40 45

Ile Phe Ala Phe Asn Gly Val Leu Asn Ile Asp Gly His Phe Met Pro
50 55 60

Leu Leu Ala Val Gln Ala Thr Lys Leu Lys Asp Gly Ile Ala Leu Ala
65 70 75 80

Ile Thr Val Asn His Ala Val Ala Asp Ala Thr Ser Val Trp His Phe
85 90 95

Ile Ser Ser Trp Ala Gln Leu Cys Lys Glu Pro Ser Asn Ile Pro Leu
100 105 110

Leu Pro Leu His Thr Arg Cys Phe Thr Thr Ile Ser Pro Ile Lys Leu
115 120 125

Asp Ile Gln Tyr Ser Ser Thr Thr Thr Glu Ser Ile Asp Asn Phe Phe
130 135 140

Pro Pro Pro Leu Thr Glu Lys Ile Phe His Phe Ser Gly Lys Thr Ile
145 150 155 160

Ser Arg Leu Lys Glu Glu Ala Met Glu Ala Cys Lys Asp Lys Ser Ile
165 170 175

Ser Ile Ser Ser Phe Gln Ala Leu Cys Gly His Leu Trp Gln Ser Ile
180 185 190

Thr Arg Ala Arg Gly Leu Ser Pro Ser Glu Pro Thr Thr Ile Lys Ile
195 200 205

Ala Val Asn Cys Arg Pro Arg Ile Val Pro Pro Leu Pro Asn Ser Tyr
210 215 220

Phe Gly Asn Ala Val Gln Val Val Asp Val Thr Met Thr Thr Glu Glu
225 230 235 240

Leu Leu Gly Asn Gly Gly Ala Cys Ala Ala Leu Ile Leu His Gln Lys
245 250 255

Ile Ser Ala His Gln Asp Thr Gln Ile Arg Ala Glu Leu Asp Lys Pro
260 265 270

Pro Lys Ile Val His Thr Asn Asn Leu Ile Pro Cys Asn Ile Ile Ala
275 280 285

Met Ala Gly Ser Pro Arg Phe Pro Ile Tyr Asn Asn Asp Phe Gly Trp
290 295 300

Gly Lys
305

<210> 23
<211> 908
<212> DNA
<213> Taxus cuspidata

<400> 23
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acaggggagg gtgcactgtt tgtggaagcc gtggtggaca atgatctttc agtcttgaaa 120

gatttggatg cccaaaatgc atcttatgag cagttgctct tttcgcttcc gcccaataca 180

caggttcagg acctccatcc tctgattctt caggtaactc gttttaaatg tggaggtttt 240

gttgtgggag ttggtttcca ccatagtata tgtgacgcac gaggaggaac tcaatttctt 300

ctaggcctag cagatatggc aaggggagag actaagcctt tagtggaacc agtatggaat 360

agagaactga taaaccctga agatctaatg cacctccaat ttcataagtt tggtttgata 420

cgccaacctc taaaacttga tgaaatttgt caagcatctt ttactataaa ctcaaagata 480

ataaattaca tcaaacaatg tgttatagaa gaatgtaatg aaatttttctc tgcatttgaa 540

gttgtagtag cattaacttg gatagcaagg acaaaggctt ttcaaattcc acatagtgag 600

aatgtgatga tgctctttgg aatggacgcg aggaaatatt ttaatccccc acttccaaag 660

ggatattatg gtaatgccat tggtacttca tgtgtaattg aaaatgtaca agacctctta 720

aatggatctc tttcgcgtgc tgtaatgatc acaaagaaat caaaggtccc tttaattgag 780

aatttaaggt caagaattgt ggcgaaccaa tctggagtag atgaggaaat taagcatgaa 840

aacgtagttg gatttggaga ttggaggcga ttgggatttc atgaagtgga cttcggctgg 900

ggcaagcc 908

<210> 24
<211> 302
<212> PRT
<213> Taxus cuspidata

<400> 24

Phe Tyr Pro Phe Ala Gly Arg Ile Arg Gln Lys Glu Asn Glu Glu Leu
1 5 10 15

Glu Val Glu Cys Thr Gly Glu Gly Ala Leu Phe Val Glu Ala Val Val
20 25 30

Asp Asn Asp Leu Ser Val Leu Lys Asp Leu Asp Ala Gln Asn Ala Ser
35 40 45

Tyr Glu Gln Leu Leu Phe Ser Leu Pro Pro Asn Thr Gln Val Gln Asp
50 55 60

Leu His Pro Leu Ile Leu Gln Val Thr Arg Phe Lys Cys Gly Gly Phe
65 70 75 80

Val Val Gly Val Gly Phe His His Ser Ile Cys Asp Ala Arg Gly Gly
85 90 95

Thr Gln Phe Leu Leu Gly Leu Ala Asp Met Ala Arg Gly Glu Thr Lys
100 105 110

Pro Leu Val Glu Pro Val Trp Asn Arg Glu Leu Ile Asn Pro Glu Asp
115 120 125

Leu Met His Leu Gln Phe His Lys Phe Gly Leu Ile Arg Gln Pro Leu
130 135 140

Lys Leu Asp Glu Ile Cys Gln Ala Ser Phe Thr Ile Asn Ser Lys Ile
145 150 155 160

Ile Asn Tyr Ile Lys Gln Cys Val Ile Glu Glu Cys Asn Glu Ile Phe
165 170 175

Ser Ala Phe Glu Val Val Val Ala Leu Thr Trp Ile Ala Arg Thr Lys
180 185 190

Ala Phe Gln Ile Pro His Ser Glu Asn Val Met Met Leu Phe Gly Met
195 200 205

Asp Ala Arg Lys Tyr Phe Asn Pro Pro Leu Pro Lys Gly Tyr Tyr Gly
210 215 220

Asn Ala Ile Gly Thr Ser Cys Val Ile Glu Asn Val Gln Asp Leu Leu
225 230 235 240

Asn Gly Ser Leu Ser Arg Ala Val Met Ile Thr Lys Lys Ser Lys Val
245 250 255

Pro Leu Ile Glu Asn Leu Arg Ser Arg Ile Val Ala Asn Gln Ser Gly
260 265 270

Val Asp Glu Glu Ile Lys His Glu Asn Val Val Gly Phe Gly Asp Trp
275 280 285

Arg Arg Leu Gly Phe His Glu Val Asp Phe Gly Trp Gly Lys
290 295 300

<210> 25
<211> 1320
<212> DNA
<213> Taxus cuspidata

<400> 25
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cccaaaaata tcctgcacct ctcccccatt gacaacaaaa ctagaggact aaccaacata 120

ttatcagtct acaatgcctc ccagagagtt tctgtttctg cagatcctgc aaaaacaatt 180

cgagaggctc tctccaaggt gctggtttat tatccccctt ttgctggaag gctgagaaac 240

acagaaaatg gggatcttga agtggagtgc acaggggagg gtgccgtctt tgtggaagcc 300

atggcggaca acgacctttc agtattacaa gatttcaatg agtacgatcc atcatttcag 360

cagctagttt ttaatcttcg agaggatgtc aatattgagg acctccatct tctaactgtt 420

caggtaactc gttttacatg tggaggattt gttgtgggca caagattcca ccatagtgta 480

tctgatggaa aaggaatcgg ccagttactt aaaggcatgg gagagatggc aaggggggag 540

tttaagccct cgttagaacc aatatggaat agagaaatgg tgaagcctga agacattatg 600

tacctccagt ttgatcactt tgatttcata cacccacctc ttaatcttga gaagtctatt 660

caagcatcta tggtaataag ctttgagaga ataaattata tcaaacgatg catgatggaa 720

gaatgcaaag aatttttttc tgcatttgaa gttgtagtag cattgatttg gctggcaagg 780

acaaagtctt ttcgaattcc acccaatgag tatgtgaaaa ttatctttcc aatcgacatg 840

aggaattcat ttgactcccc tcttccaaag ggatactatg gtaatgctat tggtaatgca 900

tgtgcaatgg ataatgtcaa agacctctta aatggatctc ttttatatgc tctaatgctt 960

ataaagaaat caaagtttgc tttaaatgag aatttcaaat caagaatctt gacaaaacca 1020

tctacattag atgcgaatat gaagcatgaa aatgtagtcg gatgtggcga ttggaggaat 1080

ttgggatttt atgaagcaga ttttggatgg ggaaatgcag tgaatgtaag ccccatgcag 1140

caacaaagag agcatgaatt agctatgcaa aattattttc tttttctccg atcagctaag 1200

aacatgattg atggaatcaa gatactaatg ttcatgcctg catcaatggt gaaaccattc 1260

aaaattgaaa tggaagtcac aataaacaaa tatgtggcta aaatatgtaa ctctaagtta 1320

<210> 26
<211> 440
<212> PRT
<213> Taxus cuspidata

<400> 26

Met Gly Arg Phe Asn Val Asp Met Ile Glu Arg Val Ile Val Ala Pro
1 5 10 15

Cys Leu Gln Ser Pro Lys Asn Ile Leu His Leu Ser Pro Ile Asp Asn
20 25 30

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Lys Thr Arg Gly Leu Thr Asn Ile Leu Ser Val Tyr Asn Ala Ser Gln
        35                  40                  45

Arg Val Ser Val Ser Ala Asp Pro Ala Lys Thr Ile Arg Glu Ala Leu
    50                  55                  60

Ser Lys Val Leu Val Tyr Tyr Pro Pro Phe Ala Gly Arg Leu Arg Asn
65                  70                  75                  80

Thr Glu Asn Gly Asp Leu Glu Val Glu Cys Thr Gly Glu Gly Ala Val
                85                  90                  95

Phe Val Glu Ala Met Ala Asp Asn Asp Leu Ser Val Leu Gln Asp Phe
            100                 105                 110

Asn Glu Tyr Asp Pro Ser Phe Gln Gln Leu Val Phe Asn Leu Arg Glu
        115                 120                 125

Asp Val Asn Ile Glu Asp Leu His Leu Leu Thr Val Gln Val Thr Arg
    130                 135                 140

Phe Thr Cys Gly Gly Phe Val Val Gly Thr Arg Phe His His Ser Val
145                 150                 155                 160

Ser Asp Gly Lys Gly Ile Gly Gln Leu Leu Lys Gly Met Gly Glu Met
                165                 170                 175

Ala Arg Gly Glu Phe Lys Pro Ser Leu Glu Pro Ile Trp Asn Arg Glu
            180                 185                 190

Met Val Lys Pro Glu Asp Ile Met Tyr Leu Gln Phe Asp His Phe Asp
        195                 200                 205

Phe Ile His Pro Pro Leu Asn Leu Glu Lys Ser Ile Gln Ala Ser Met
    210                 215                 220

Val Ile Ser Phe Glu Arg Ile Asn Tyr Ile Lys Arg Cys Met Met Glu
225                 230                 235                 240

Glu Cys Lys Glu Phe Phe Ser Ala Phe Glu Val Val Val Ala Leu Ile
                245                 250                 255

Trp Leu Ala Arg Thr Lys Ser Phe Arg Ile Pro Pro Asn Glu Tyr Val
```

260 265 270

Lys Ile Ile Phe Pro Ile Asp Met Arg Asn Ser Phe Asp Ser Pro Leu
275 280 285

Pro Lys Gly Tyr Tyr Gly Asn Ala Ile Gly Asn Ala Cys Ala Met Asp
290 295 300

Asn Val Lys Asp Leu Leu Asn Gly Ser Leu Leu Tyr Ala Leu Met Leu
305 310 315 320

Ile Lys Lys Ser Lys Phe Ala Leu Asn Glu Asn Phe Lys Ser Arg Ile
325 330 335

Leu Thr Lys Pro Ser Thr Leu Asp Ala Asn Met Lys His Glu Asn Val
340 345 350

Val Gly Cys Gly Asp Trp Arg Asn Leu Gly Phe Tyr Glu Ala Asp Phe
355 360 365

Gly Trp Gly Asn Ala Val Asn Val Ser Pro Met Gln Gln Gln Arg Glu
370 375 380

His Glu Leu Ala Met Gln Asn Tyr Phe Leu Phe Leu Arg Ser Ala Lys
385 390 395 400

Asn Met Ile Asp Gly Ile Lys Ile Leu Met Phe Met Pro Ala Ser Met
405 410 415

Val Lys Pro Phe Lys Ile Glu Met Glu Val Thr Ile Asn Lys Tyr Val
420 425 430

Ala Lys Ile Cys Asn Ser Lys Leu
435 440

<210> 27
<211> 1317
<212> DNA
<213> Taxus cuspidata

<400> 27
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cctctgccca aaaccaccct gcaactctcc tccatagaca acctgccagg ggtaagagga 120

agcattttca atgccttgtt aatttacaat gcctctccct ctcccaccat gatctctgca 180

gatcctgcaa aaccaattag agaagctctc gccaagatcc tggtttatta tccccctttt 240

gctgggcgcc tcagagagac agaaaatggg gatctggaag tggaatgcac aggggagggt 300

gctatgtttt tggaagccat ggcagacaat gagctgtctg tgttgggaga ttttgatgac 360

agcaatccat catttcagca gctacttttt tcgcttccac tcgataccaa tttcaaagac 420

ctctctcttc tggttgttca ggtaactcgt tttacatgtg gaggctttgt tgttggagtg 480

agtttccacc atggtgtatg tgatggtcga ggagcggccc aatttcttaa aggtttggca 540

gagatggcac ggggagaggt taagctctca ttggaaccaa tatggaatag ggaactagtg 600

aagcttgatg accctaaata ccttcaattt tttcactttg aattcctacg agcgccttca 660

attgttgaga aaattgttca aacatatttt attatagatt ttgagaccat aaattatatc 720

aaacaatctg ttatggaaga atgtaaagaa ttttgctctt cattcgaagt tgcatcagca 780

atgacttgga tagcaaggac aagagctttt caaattccag aaagtgagta cgtgaaaatt 840

ctcttcggaa tggacatgag gaactcattt aatccccctc ttccaagcgg atactatggt 900

aactccattg gtaccgcatg tgcagtggat aatgttcaag acctcttaag tggatctctt 960

ttgcgtgcta taatgattat aaagaaatca aaggtctctt taaatgataa tttcaagtca 1020

agagctgtgg tgaagccatc tgaattggat gtgaatatga atcatgaaaa cgtagttgca 1080

tttgctgatt ggagccgatt gggatttgat gaagtggatt ttggttgggg gaatgcggtg 1140

agtgtaagcc ctgtgcaaca acagtctgcg ttagcaatgc aaaattattt tcttttccta 1200

aaaccttcca agaacaagcc cgatggaatc aaaatattaa tgtttctgcc cctatcaaaa 1260

atgaagtcat tcaaaattga aatggaagcc atgatgaaaa aatatgtggc taaagta 1317

<210> 28
<211> 439
<212> PRT
<213> Taxus cuspidata

<400> 28

Met Glu Lys Thr Asp Leu His Val Asn Leu Ile Glu Lys Val Met Val
1 5 10 15

Gly Pro Ser Pro Pro Leu Pro Lys Thr Thr Leu Gln Leu Ser Ser Ile
20 25 30

Asp Asn Leu Pro Gly Val Arg Gly Ser Ile Phe Asn Ala Leu Leu Ile

35 40 45

Tyr Asn Ala Ser Pro Ser Pro Thr Met Ile Ser Ala Asp Pro Ala Lys
50 55 60

Pro Ile Arg Glu Ala Leu Ala Lys Ile Leu Val Tyr Tyr Pro Pro Phe
65 70 75 80

Ala Gly Arg Leu Arg Glu Thr Glu Asn Gly Asp Leu Glu Val Glu Cys
85 90 95

Thr Gly Glu Gly Ala Met Phe Leu Glu Ala Met Ala Asp Asn Glu Leu
100 105 110

Ser Val Leu Gly Asp Phe Asp Asp Ser Asn Pro Ser Phe Gln Gln Leu
115 120 125

Leu Phe Ser Leu Pro Leu Asp Thr Asn Phe Lys Asp Leu Ser Leu Leu
130 135 140

Val Val Gln Val Thr Arg Phe Thr Cys Gly Gly Phe Val Val Gly Val
145 150 155 160

Ser Phe His His Gly Val Cys Asp Gly Arg Gly Ala Ala Gln Phe Leu
165 170 175

Lys Gly Leu Ala Glu Met Ala Arg Gly Glu Val Lys Leu Ser Leu Glu
180 185 190

Pro Ile Trp Asn Arg Glu Leu Val Lys Leu Asp Asp Pro Lys Tyr Leu
195 200 205

Gln Phe Phe His Phe Glu Phe Leu Arg Ala Pro Ser Ile Val Glu Lys
210 215 220

Ile Val Gln Thr Tyr Phe Ile Ile Asp Phe Glu Thr Ile Asn Tyr Ile
225 230 235 240

Lys Gln Ser Val Met Glu Glu Cys Lys Glu Phe Cys Ser Ser Phe Glu
245 250 255

Val Ala Ser Ala Met Thr Trp Ile Ala Arg Thr Arg Ala Phe Gln Ile
260 265 270

Pro Glu Ser Glu Tyr Val Lys Ile Leu Phe Gly Met Asp Met Arg Asn
275 280 285

Ser Phe Asn Pro Pro Leu Pro Ser Gly Tyr Tyr Gly Asn Ser Ile Gly
290 295 300

Thr Ala Cys Ala Val Asp Asn Val Gln Asp Leu Leu Ser Gly Ser Leu
305 310 315 320

Leu Arg Ala Ile Met Ile Ile Lys Lys Ser Lys Val Ser Leu Asn Asp
325 330 335

Asn Phe Lys Ser Arg Ala Val Val Lys Pro Ser Glu Leu Asp Val Asn
340 345 350

Met Asn His Glu Asn Val Val Ala Phe Ala Asp Trp Ser Arg Leu Gly
355 360 365

Phe Asp Glu Val Asp Phe Gly Trp Gly Asn Ala Val Ser Val Ser Pro
370 375 380

Val Gln Gln Gln Ser Ala Leu Ala Met Gln Asn Tyr Phe Leu Phe Leu
385 390 395 400

Lys Pro Ser Lys Asn Lys Pro Asp Gly Ile Lys Ile Leu Met Phe Leu
405 410 415

Pro Leu Ser Lys Met Lys Ser Phe Lys Ile Glu Met Glu Ala Met Met
420 425 430

Lys Lys Tyr Val Ala Lys Val
435

<210> 29
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Proteolytic Fragment

<400> 29

Thr Thr Leu Gln Leu Ser Ser Ile Asp Asn Leu Pro Gly Val Arg

1 5 10 15

<210> 30
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Proteolytic Fragment

<400> 30

Ile Leu Val Tyr Tyr Pro Pro Phe Ala Gly Arg
1 5 10

<210> 31
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Proteolytic Fragment

<400> 31

Phe Thr Cys Gly Gly Phe Val Val Gly Val Ser Phe
1 5 10

<210> 32
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Proteolytic Fragment

<400> 32

Lys Gly Leu Ala Glu Ile Ala Arg Gly Glu Val Lys
1 5 10

<210> 33
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Proteolytic Fragment

<400> 33

Asn Leu Pro Asn Asp Thr Asn Pro Ser Ser Gly Tyr Tyr Gly Asn
1 5 10 15

<210> 34
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<220>
<221> modified_base
<222> (3)..(3)
<223> n = I

<220>
<221> modified_base
<222> (6)..(6)
<223> n = I

<220>
<221> misc_feature
<222> (9)..(9)
<223> n = I, C or A

<220>
<221> misc_feature
<222> (18)..(18)
<223> n = I, C or A

<400> 34
atnytngtnt aytayccncc 20

<210> 35
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<220>
<221> misc_feature
<222> (9)..(9)
<223> n = I, C or A

<220>
<221> misc_feature
<222> (12)..(12)
<223> n = I, C or A

<220>
<221> misc_feature
<222> (18)..(18)
<223> n = I, C or A

<400> 35
taytayccnc cnttygcngg 20

<210> 36
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<220>
<221> modified_base
<222> (9)..(9)
<223> n = I

<220>
<221> misc_feature
<222> (15)..(15)
<223> n = I, C or A

<220>
<221> misc_feature
<222> (18)..(18)
<223> n = I, C or A

<400> 36
ttytayccnt tygcnggnag 20

<210> 37
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<220>
<221> modified_base
<222> (9)..(9)
<223> n = I

<220>
<221> modified_base

<222> (12)..(12)
<223> n = I

<220>
<221> misc_feature
<222> (15)..(15)
<223> n = I, C or A

<220>
<221> misc_feature
<222> (15)..(15)
<223> n = I, C or A

<220>
<221> misc_feature
<222> (18)..(18)
<223> n = I, C or A

<400> 37
taytayccnt tngcnggnmg 20

<210> 38
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<220>
<221> misc_feature
<222> (9)..(9)
<223> n = I, C or A

<220>
<221> misc_feature
<222> (15)..(15)
<223> n = I, C or A

<400> 38
ctraarccna ccccnttygg 20

<210> 39
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Consensus Sequence

<400> 39

Phe Tyr Pro Phe Ala Gly Arg
1 5

<210> 40
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Consensus Sequence

<400> 40

Tyr Tyr Pro Leu Ala Gly Arg
1 5

<210> 41
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Consensus Sequence

<400> 41

Asp Phe Gly Trp Gly Lys Pro
1 5

<210> 42
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 42
cctcatcttt cccccattga taat 24

<210> 43
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primier

<400> 43
aaaaagaaaa taattttgcc atgcaag 27

<210> 44
<211> 1320
<212> DNA
<213> Taxus cuspidata

<400> 44
atggcaggct caacagaatt tgtggtaaga agcttagaga gagtgatggt ggctccaagc 60

cagccatcgc ccaaagcttt cctgcagctc tccacccttg acaatctacc aggggtgaga 120

gaaaacattt ttaacacctt gttagtctac aatgcctcag acagagtttc cgtagatcct 180

gcaaaagtaa ttcggcaggc tctctccaag gtgttggtgt actattcccc ttttgcaggg 240

cgtctcagga aaaaagaaaa tggagatctt gaagtggagt gcacagggga gggtgctctg 300

tttgtggaag ccatggctga cactgacctc tcagtcttag gagatttgga tgactacagt 360

ccttcacttg agcaactact tttttgtctt ccgcctgata cagatattga ggacatccat 420

cctctggtgg ttcaggtaac tcgttttaca tgtggaggtt ttgttgtagg ggtgagtttc 480

tgccatggta tatgtgatgg actaggagca ggccagtttc ttatagccat gggagagatg 540

gcaaggggag agattaagcc ctcctcggag ccaatatgga agagagaatt gctgaagccg 600

gaagaccctt tataccggtt ccagtattat cactttcaat tgatttgccc gccttcaaca 660

ttcgggaaaa tagttcaagg atctcttgtt ataacctctg agacaataaa ttgtatcaaa 720

caatgcctta gggaagaaag taaagaattt tgctctgcgt tcgaagttgt atctgcattg 780

gcttggatag caaggacaag ggctcttcaa attccacata gtgagaatgt gaagcttatt 840

tttgcaatgg acatgagaaa attatttaat ccaccacttt cgaagggata ctacggtaat 900

tttgttggta ccgtatgtgc aatggataat gtcaaggacc tattaagtgg atctcttttg 960

cgtgttgtaa ggattataaa gaaagcaaag gtctctttaa atgagcattt cacgtcaaca 1020

atcgtgacac cccgttctgg atcagatgag agtatcaatt atgaaaacat agttggattt 1080

ggtgatcgaa ggcgattggg atttgatgaa gtagactttg ggtgggggca tgcagataat 1140

gtaagtctcg tgcaacatgg attgaaggat gtttcagtcg tgcaaagtta ttttcttttc 1200

atacgacctc ccaagaataa ccccgatgga atcaagatcc tatcgttcat gcccccgtca 1260

atagtgaaat ccttcaaatt tgaaatggaa accatgacaa acaaatatgt aactaagcct 1320

<210> 45
<211> 440
<212> PRT
<213> Taxus cuspidata

<400> 45

Met Ala Gly Ser Thr Glu Phe Val Val Arg Ser Leu Glu Arg Val Met
1 5 10 15

Val Ala Pro Ser Gln Pro Ser Pro Lys Ala Phe Leu Gln Leu Ser Thr
20 25 30

Leu Asp Asn Leu Pro Gly Val Arg Glu Asn Ile Phe Asn Thr Leu Leu
35 40 45

Val Tyr Asn Ala Ser Asp Arg Val Ser Val Asp Pro Ala Lys Val Ile
50 55 60

Arg Gln Ala Leu Ser Lys Val Leu Val Tyr Tyr Ser Pro Phe Ala Gly
65 70 75 80

Arg Leu Arg Lys Lys Glu Asn Gly Asp Leu Glu Val Glu Cys Thr Gly
85 90 95

Glu Gly Ala Leu Phe Val Glu Ala Met Ala Asp Thr Asp Leu Ser Val
100 105 110

Leu Gly Asp Leu Asp Asp Tyr Ser Pro Ser Leu Glu Gln Leu Leu Phe
115 120 125

Cys Leu Pro Pro Asp Thr Asp Ile Glu Asp Ile His Pro Leu Val Val
130 135 140

Gln Val Thr Arg Phe Thr Cys Gly Gly Phe Val Val Gly Val Ser Phe
145 150 155 160

Cys His Gly Ile Cys Asp Gly Leu Gly Ala Gly Gln Phe Leu Ile Ala
165 170 175

Met Gly Glu Met Ala Arg Gly Glu Ile Lys Pro Ser Ser Glu Pro Ile
180 185 190

Trp Lys Arg Glu Leu Leu Lys Pro Glu Asp Pro Leu Tyr Arg Phe Gln
195 200 205

Tyr Tyr His Phe Gln Leu Ile Cys Pro Pro Ser Thr Phe Gly Lys Ile
210 215 220

Val Gln Gly Ser Leu Val Ile Thr Ser Glu Thr Ile Asn Cys Ile Lys
225 230 235 240

Gln Cys Leu Arg Glu Glu Ser Lys Glu Phe Cys Ser Ala Phe Glu Val
245 250 255

Val Ser Ala Leu Ala Trp Ile Ala Arg Thr Arg Ala Leu Gln Ile Pro
260 265 270

His Ser Glu Asn Val Lys Leu Ile Phe Ala Met Asp Met Arg Lys Leu
275 280 285

Phe Asn Pro Pro Leu Ser Lys Gly Tyr Tyr Gly Asn Phe Val Gly Thr
290 295 300

Val Cys Ala Met Asp Asn Val Lys Asp Leu Leu Ser Gly Ser Leu Leu
305 310 315 320

Arg Val Val Arg Ile Ile Lys Lys Ala Lys Val Ser Leu Asn Glu His
325 330 335

Phe Thr Ser Thr Ile Val Thr Pro Arg Ser Gly Ser Asp Glu Ser Ile
340 345 350

Asn Tyr Glu Asn Ile Val Gly Phe Gly Asp Arg Arg Arg Leu Gly Phe
355 360 365

Asp Glu Val Asp Phe Gly Trp Gly His Ala Asp Asn Val Ser Leu Val
370 375 380

Gln His Gly Leu Lys Asp Val Ser Val Val Gln Ser Tyr Phe Leu Phe
385 390 395 400

Ile Arg Pro Pro Lys Asn Asn Pro Asp Gly Ile Lys Ile Leu Ser Phe
405 410 415

Met Pro Pro Ser Ile Val Lys Ser Phe Lys Phe Glu Met Glu Thr Met
420 425 430

Thr Asn Lys Tyr Val Thr Lys Pro
435 440

<210> 46
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 46
gggaattcca tatggcaggc tcaacagaat ttgtgg 36

<210> 47
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer

<400> 47
gtttatacat tgattcggaa ctagatctga tc 32

<210> 48
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Six amino acid motif found in acyl transferases

<220>
<221> VARIANT
<222> (2)..(4)
<223> Xaa = any amino acid

<400> 48

His Xaa Xaa Xaa Asp Gly
1 5

<210> 49
<211> 1332
<212> DNA
<213> Taxus cuspidata

<400> 49
atggagaagt ctggttcagc agatctacat gtaaatatca ttgagcgagt ggtggtggcg 60

ccatgccagc cgacgcccaa aacaatcctg cagctctcta gcattgacaa aatgggagga 120

ggatttgcca acgtattgct agtcttcggt gcctcccatg gcgtttctgc agatcctgca 180

aaaacaattc gagaggctct ctccaagacc ttggtctttt atttcccttt tgctgggcgg 240

ctcagaaaga aagaagatgg ggatatcgaa gtggagtgca tagagcaggg agctctgttc 300

gtggaagcca tggcggacaa cgatctttca gtcgtacgag atctggatga gtacaatcca 360

ttatttcggc agctacaatc ttcgctttca ctggatacag attacaagga cctccatctt 420

atgactgttc aggtaactcc gtttacatgt gggggttttg tcatgggaac gagtgtacac 480

caaagtatat gcgatggaaa tggattgggg caatttttta aaagcatggc agagatagtg 540

aggggagaag ttaagccctc aatcgaacca atatggaata gagaattggt gaagcctgaa 600

gactatatac acctccagtt gtatgtcagt gaattcattc gcccaccttt agtagttgag 660

aaagttgggc aaacatctct tgttataagc ttcgagaaaa taaatcatat caaacgatgc 720

attatggaag aaagtaaaga atctttctct tcatttgaaa ttgtaacagc aatggtttgg 780

ctagcaagga caagggcttt tcaaattcca cacaacgagg atgtgactct tctccttgca 840

atggatgcaa ggagatcatt tgaccccccc attccgaagg gatactacgg taatgtcatt 900

ggtactacat atgcaaaaga taatgtccac aacctcttaa gtggatctct tttgcatgct 960

ctaacagtta taaagaaatc aatgtcctca ttttatgaga atatgacctc aagagtcttg 1020

gtgaacccat ctacattaga tttgagtatg aagtatgaaa atgtagtttc acttagtgat 1080

tggagccggt tgggacataa tgaagtggac tttgggtggg gaaatgcaat aaatgtaagc 1140

actctgcaac aacaatggga aaatgaggta gctataccaa ctttttttac tttccttcaa 1200

actcccaaga atataccaga tggaatcaag atactaatgt tcatgccccc atcaagagag 1260

aaaacattcg aaattgaagt ggaagccatg ataagaaaat atttgactaa agtgtcgcat 1320

tcaaagctat aa 1332

<210> 50
<211> 443
<212> PRT
<213> Taxus cuspidata

<400> 50

Met Glu Lys Ser Gly Ser Ala Asp Leu His Val Asn Ile Ile Glu Arg
1 5 10 15

Val Val Val Ala Pro Cys Gln Pro Thr Pro Lys Thr Ile Leu Gln Leu
20 25 30

Ser Ser Ile Asp Lys Met Gly Gly Gly Phe Ala Asn Val Leu Leu Val

35 40 45

Phe Gly Ala Ser His Gly Val Ser Ala Asp Pro Ala Lys Thr Ile Arg
50 55 60

Glu Ala Leu Ser Lys Thr Leu Val Phe Tyr Phe Pro Phe Ala Gly Arg
65 70 75 80

Leu Arg Lys Lys Glu Asp Gly Asp Ile Glu Val Glu Cys Ile Glu Gln
85 90 95

Gly Ala Leu Phe Val Glu Ala Met Ala Asp Asn Asp Leu Ser Val Val
100 105 110

Arg Asp Leu Asp Glu Tyr Asn Pro Leu Phe Arg Gln Leu Gln Ser Ser
115 120 125

Leu Ser Leu Asp Thr Asp Tyr Lys Asp Leu His Leu Met Thr Val Gln
130 135 140

Val Thr Pro Phe Thr Cys Gly Gly Phe Val Met Gly Thr Ser Val His
145 150 155 160

Gln Ser Ile Cys Asp Gly Asn Gly Leu Gly Gln Phe Phe Lys Ser Met
165 170 175

Ala Glu Ile Val Arg Gly Glu Val Lys Pro Ser Ile Glu Pro Ile Trp
180 185 190

Asn Arg Glu Leu Val Lys Pro Glu Asp Tyr Ile His Leu Gln Leu Tyr
195 200 205

Val Ser Glu Phe Ile Arg Pro Pro Leu Val Val Glu Lys Val Gly Gln
210 215 220

Thr Ser Leu Val Ile Ser Phe Glu Lys Ile Asn His Ile Lys Arg Cys
225 230 235 240

Ile Met Glu Glu Ser Lys Glu Ser Phe Ser Ser Phe Glu Ile Val Thr
245 250 255

Ala Met Val Trp Leu Ala Arg Thr Arg Ala Phe Gln Ile Pro His Asn
260 265 270

Glu Asp Val Thr Leu Leu Leu Ala Met Asp Ala Arg Arg Ser Phe Asp
275 280 285

Pro Pro Ile Pro Lys Gly Tyr Tyr Gly Asn Val Ile Gly Thr Thr Tyr
290 295 300

Ala Lys Asp Asn Val His Asn Leu Leu Ser Gly Ser Leu Leu His Ala
305 310 315 320

Leu Thr Val Ile Lys Lys Ser Met Ser Ser Phe Tyr Glu Asn Met Thr
325 330 335

Ser Arg Val Leu Val Asn Pro Ser Thr Leu Asp Leu Ser Met Lys Tyr
340 345 350

Glu Asn Val Val Ser Leu Ser Asp Trp Ser Arg Leu Gly His Asn Glu
355 360 365

Val Asp Phe Gly Trp Gly Asn Ala Ile Asn Val Ser Thr Leu Gln Gln
370 375 380

Gln Trp Glu Asn Glu Val Ala Ile Pro Thr Phe Phe Thr Phe Leu Gln
385 390 395 400

Thr Pro Lys Asn Ile Pro Asp Gly Ile Lys Ile Leu Met Phe Met Pro
405 410 415

Pro Ser Arg Glu Lys Thr Phe Glu Ile Glu Val Glu Ala Met Ile Arg
420 425 430

Lys Tyr Leu Thr Lys Val Ser His Ser Lys Leu
435 440

<210> 51
<211> 1338
<212> DNA
<213> Taxus cuspidata

<400> 51
atgaagaaga caggttcgtt tgcagagttc catgtgaata tgattgagcg agtcatggtg 60

agaccgtgcc tgccttcgcc caaaacaatc ctccctctct ccgccattga caacatggca 120

agagcttttt ctaacgtatt gctggtctac gctgccaaca tggacagagt ctctgcagat 180

cctgcaaaag tgattcgaga ggctctctcc aaggtgctgg tttattatta ccctttgct 240

gggcggctca gaaataaaga aaatggggaa cttgaagtgg agtgcacagg gcagggtgtt 300

ctgtttctgg aagccatggc tgacagcgac ctttcagtct taacagatct ggataactac 360

aatccatcgt ttcagcagtt gatttttct ctaccacagg atacagatat tgaggacctc 420

catctcttga ttgttcaggt aactcgtttt acatgtgggg gttttgttgt gggagcgaat 480

gtgtatggta gtgcatgcga tgcaaaagga tttggccagt ttcttcaaag tatggcagag 540

atggcgagag gagaggttaa gccctcgatt gaaccgatat ggaatagaga actggtgaag 600

ctagaacatt gtatgccctt ccggatgagt catcttcaaa ttatacatgc acctgtaatt 660

gaggagaaat ttgttcaaac atctcttgtt ataaactttg agataataaa tcatatcaga 720

cgacgcatca tggaagaacg caaagaaagt ttatcttcat ttgaaattgt agcagcattg 780

gtttggctag caaagataaa ggcttttcaa attccacata gtgagaatgt gaagcttctt 840

tttgcaatgg acttgaggag atcatttaat ccccctcttc cacatggata ctatggcaat 900

gcctttggta ttgcatgtgc aatggataat gtccatgacc ttctaagtgg atctcttttg 960

cgcactataa tgatcataaa gaaatcaaag ttctctttac acaaagaact caactcaaaa 1020

accgtgatga gctcatctgt agtagatgtc aatacgaagt ttgaagatgt agtttcaatt 1080

agtgattgga ggcattctat atattatgaa gtggactttg ggtggggaga tgcaatgaac 1140

gtgagcacta tgctacaaca acaggagcac gagaaatctc tgccaactta tttttctttc 1200

ctacaatcta ctaagaacat gccagatgga atcaagatgc taatgtttat gcctccatca 1260

aaactgaaaa aattcaaaat tgaaatagaa gctatgataa aaaaatatgt gactaaagtg 1320

tgtccgtcaa agttatga 1338

<210> 52
<211> 445
<212> PRT
<213> Taxus cuspidata

<400> 52

Met Lys Lys Thr Gly Ser Phe Ala Glu Phe His Val Asn Met Ile Glu
1 5 10 15

Arg Val Met Val Arg Pro Cys Leu Pro Ser Pro Lys Thr Ile Leu Pro
20 25 30

Leu Ser Ala Ile Asp Asn Met Ala Arg Ala Phe Ser Asn Val Leu Leu
35 40 45

Val Tyr Ala Ala Asn Met Asp Arg Val Ser Ala Asp Pro Ala Lys Val
50 55 60

Ile Arg Glu Ala Leu Ser Lys Val Leu Val Tyr Tyr Tyr Pro Phe Ala
65 70 75 80

Gly Arg Leu Arg Asn Lys Glu Asn Gly Glu Leu Glu Val Glu Cys Thr
85 90 95

Gly Gln Gly Val Leu Phe Leu Glu Ala Met Ala Asp Ser Asp Leu Ser
100 105 110

Val Leu Thr Asp Leu Asp Asn Tyr Asn Pro Ser Phe Gln Gln Leu Ile
115 120 125

Phe Ser Leu Pro Gln Asp Thr Asp Ile Glu Asp Leu His Leu Leu Ile
130 135 140

Val Gln Val Thr Arg Phe Thr Cys Gly Gly Phe Val Val Gly Ala Asn
145 150 155 160

Val Tyr Gly Ser Ala Cys Asp Ala Lys Gly Phe Gly Gln Phe Leu Gln
165 170 175

Ser Met Ala Glu Met Ala Arg Gly Glu Val Lys Pro Ser Ile Glu Pro
180 185 190

Ile Trp Asn Arg Glu Leu Val Lys Leu Glu His Cys Met Pro Phe Arg
195 200 205

Met Ser His Leu Gln Ile Ile His Ala Pro Val Ile Glu Glu Lys Phe
210 215 220

Val Gln Thr Ser Leu Val Ile Asn Phe Glu Ile Ile Asn His Ile Arg
225 230 235 240

Arg Arg Ile Met Glu Glu Arg Lys Glu Ser Leu Ser Ser Phe Glu Ile
245 250 255

Val Ala Ala Leu Val Trp Leu Ala Lys Ile Lys Ala Phe Gln Ile Pro

260 265 270

His Ser Glu Asn Val Lys Leu Leu Phe Ala Met Asp Leu Arg Arg Ser
275 280 285

Phe Asn Pro Pro Leu Pro His Gly Tyr Tyr Gly Asn Ala Phe Gly Ile
290 295 300

Ala Cys Ala Met Asp Asn Val His Asp Leu Leu Ser Gly Ser Leu Leu
305 310 315 320

Arg Thr Ile Met Ile Ile Lys Lys Ser Lys Phe Ser Leu His Lys Glu
325 330 335

Leu Asn Ser Lys Thr Val Met Ser Ser Ser Val Val Asp Val Asn Thr
340 345 350

Lys Phe Glu Asp Val Val Ser Ile Ser Asp Trp Arg His Ser Ile Tyr
355 360 365

Tyr Glu Val Asp Phe Gly Trp Gly Asp Ala Met Asn Val Ser Thr Met
370 375 380

Leu Gln Gln Gln Glu His Glu Lys Ser Leu Pro Thr Tyr Phe Ser Phe
385 390 395 400

Leu Gln Ser Thr Lys Asn Met Pro Asp Gly Ile Lys Met Leu Met Phe
405 410 415

Met Pro Pro Ser Lys Leu Lys Lys Phe Lys Ile Glu Ile Glu Ala Met
420 425 430

Ile Lys Lys Tyr Val Thr Lys Val Cys Pro Ser Lys Leu
435 440 445

<210> 53
<211> 1326
<212> DNA
<213> Taxus cuspidata

<400> 53
atggagaagg caggctcaac agacttccat gtaaagaaat ttgatccagt catggtagcc 60

ccaagccttc catcgcccaa agctaccgtc agctctctg tcgttgatag cctaacaatc 120

tgcaggggaa tttttaacac gttgttggtt ttcaatgccc ctgacaacat ttctgcagat 180

cctgtaaaaa taattagaga ggctctctcc aaggtgttgg tgtattattt ccctcttgct 240

gggcggctca gaagtaaaga aattggggaa cttgaagtgg agtgcacagg ggatggtgct 300

ctgtttgtgg aagccatggt ggaagacacc atttcagtct tacgagatct ggatgacctc 360

aatccatcat ttcagcagtt agtttttgg catccattgg acactgctat tgaggatctt 420

catcttgtga ttgttcaggt aacacgtttt acatgtgggg gcattgccgt tggagtgact 480

ttgccccata gtgtatgtga tggacgtgga gcagcccagt ttgttacagc actggcagag 540

atggcgaggg gagaggttaa gccctcacta gaaccaatat ggaatagaga attgttgaac 600

cctgaagacc ctctacatct ccagttaaat caatttgatt cgatatgccc acctccaatg 660

ctggaggaat tgggtcaagc ttcttttgtt ataaacgttg acaccataga atatatgaag 720

caatgtgtca tggaggaatg taatgaattt tgttcgtctt ttgaagtagt ggcagcattg 780

gtttggatag cacggacaaa ggctcttcaa attccacata ctgagaatgt gaagcttctc 840

tttgcgatgg atttgaggaa attatttaat cccccacttc caaatggata ttatggtaat 900

gccattggta ctgcatatgc aatggataat gtccaagacc tcttaaatgg atctcttttg 960

cgtgctataa tgattataaa aaaagcaaag gctgatttaa aagataatta ttcgaggtca 1020

agggtagtta caaacccata ttcattagat gtgaacaaga aatccgacaa cattcttgca 1080

ttgagtgact ggaggcggtt gggattttat gaagccgatt ttgggtgggg aggtccactg 1140

aatgtaagtt ccctgcaacg gttggaaaat ggattgccta tgtttagtac ttttctatac 1200

ctactacctg ccaaaaacaa gtctgatgga atcaagctgc tactgtcttg tatgccacca 1260

acaacattga aatcatttaa aattgtaatg gaagctatga tagagaaata tgtaagtaaa 1320

gtgtga 1326

<210> 54
<211> 441
<212> PRT
<213> Taxus cuspidata

<400> 54

Met Glu Lys Ala Gly Ser Thr Asp Phe His Val Lys Lys Phe Asp Pro
1 5 10 15

Val Met Val Ala Pro Ser Leu Pro Ser Pro Lys Ala Thr Val Gln Leu
20 25 30

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Ser Val Val Asp Ser Leu Thr Ile Cys Arg Gly Ile Phe Asn Thr Leu
        35                  40                  45

Leu Val Phe Asn Ala Pro Asp Asn Ile Ser Ala Asp Pro Val Lys Ile
    50                  55                  60

Ile Arg Glu Ala Leu Ser Lys Val Leu Val Tyr Tyr Phe Pro Leu Ala
65                  70                  75                  80

Gly Arg Leu Arg Ser Lys Glu Ile Gly Glu Leu Glu Val Glu Cys Thr
                85                  90                  95

Gly Asp Gly Ala Leu Phe Val Glu Ala Met Val Glu Asp Thr Ile Ser
            100                 105                 110

Val Leu Arg Asp Leu Asp Asp Leu Asn Pro Ser Phe Gln Gln Leu Val
        115                 120                 125

Phe Trp His Pro Leu Asp Thr Ala Ile Glu Asp Leu His Leu Val Ile
    130                 135                 140

Val Gln Val Thr Arg Phe Thr Cys Gly Gly Ile Ala Val Gly Val Thr
145                 150                 155                 160

Leu Pro His Ser Val Cys Asp Gly Arg Gly Ala Ala Gln Phe Val Thr
                165                 170                 175

Ala Leu Ala Glu Met Ala Arg Gly Glu Val Lys Pro Ser Leu Glu Pro
            180                 185                 190

Ile Trp Asn Arg Glu Leu Leu Asn Pro Glu Asp Pro Leu His Leu Gln
        195                 200                 205

Leu Asn Gln Phe Asp Ser Ile Cys Pro Pro Pro Met Leu Glu Glu Leu
    210                 215                 220

Gly Gln Ala Ser Phe Val Ile Asn Val Asp Thr Ile Glu Tyr Met Lys
225                 230                 235                 240

Gln Cys Val Met Glu Glu Cys Asn Glu Phe Cys Ser Ser Phe Glu Val
                245                 250                 255
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Val Ala Ala Leu Val Trp Ile Ala Arg Thr Lys Ala Leu Gln Ile Pro
260 265 270

His Thr Glu Asn Val Lys Leu Leu Phe Ala Met Asp Leu Arg Lys Leu
275 280 285

Phe Asn Pro Pro Leu Pro Asn Gly Tyr Tyr Gly Asn Ala Ile Gly Thr
290 295 300

Ala Tyr Ala Met Asp Asn Val Gln Asp Leu Leu Asn Gly Ser Leu Leu
305 310 315 320

Arg Ala Ile Met Ile Ile Lys Lys Ala Lys Ala Asp Leu Lys Asp Asn
325 330 335

Tyr Ser Arg Ser Arg Val Val Thr Asn Pro Tyr Ser Leu Asp Val Asn
340 345 350

Lys Lys Ser Asp Asn Ile Leu Ala Leu Ser Asp Trp Arg Arg Leu Gly
355 360 365

Phe Tyr Glu Ala Asp Phe Gly Trp Gly Gly Pro Leu Asn Val Ser Ser
370 375 380

Leu Gln Arg Leu Glu Asn Gly Leu Pro Met Phe Ser Thr Phe Leu Tyr
385 390 395 400

Leu Leu Pro Ala Lys Asn Lys Ser Asp Gly Ile Lys Leu Leu Leu Ser
405 410 415

Cys Met Pro Pro Thr Thr Leu Lys Ser Phe Lys Ile Val Met Glu Ala
420 425 430

Met Ile Glu Lys Tyr Val Ser Lys Val
435 440

<210> 55
<211> 1347
<212> DNA
<213> Taxus cuspidata

<400> 55
atggagaagg gaaatgcgag tgatgtgcca gaattgcatg tacagatctg tgagcgggtg 60

atggtgaaac catgcgtgcc ttctccttcg ccaaatcttg tcctccagct ctccgcggtg 120

gacagactgc cagggatgaa gtttgctact tttagcgccg tgttagtcta caatgccagc 180

tctcactcca tttttgcaaa tcctgcacag attattcggc aggctctctc caaggtgttg 240

cagtattatc ccgcttttgc cgggcggatc agacagaaag aaaatgagga actggaagtg 300

gagtgcacag gggagggtgc gctgtttgtg gaagccctgg tcgacaatga tctttcagtc 360

ttgcgagatt tggatgccca aaatgcatct tatgagcagt tgctcttttc gcttccgccc 420

aatatacagg ttcaggacct ccatcctctg attcttcagg taactcgttt tacgtgtgga 480

ggttttgttg tgggagtagg ttttcaccat ggtatatgcg acgcacgagg aggaactcaa 540

tttcttcaag gcctagcaga tatggcaagg ggagagacta agcctttagt ggaaccagta 600

tggaatagag aactgataaa gcccgaagat ctaatgcacc tccaatttca taagtttggt 660

ttgatacgcc aacctctaaa acttgatgaa atttgtcaag catcttttac tataaactca 720

gagataataa attacatcaa acaatgtgtt atagaagaat gtaacgaaat tttctctgca 780

tttgaagttg tagtagcatt aacttggata gcaaggacaa aggcttttca aattccacat 840

aatgagaatg tgatgatgct ctttggaatg gacgcgagga aatattttaa tcccccactt 900

ccaaagggat attatggtaa tgccattggt acttcatgtg taattgaaaa tgtacaagac 960

ctcttaaatg gatctctttc gcgtgctgta atgattacaa agaaatcaaa gatcccttta 1020

attgagaatt taaggtcaag aattgtggcg aaccaatctg gagtagatga ggaaattaag 1080

catgaaaacg tagttggatt tggagattgg aggcgattgg gatttcatga agtggacttc 1140

ggatcgggag atgcagtgaa catcagcccc atacaacaac gactagagga tgatcaattg 1200

gctatgcgaa attattttct tttccttcga ccttacaagg acatgcctaa tggaatcaaa 1260

atactaatgt tcatggatcc atcaagagtg aaattattca aagatgaaat ggaagccatg 1320

ataattaaat atatgccgaa agcctaa 1347

<210> 56
<211> 448
<212> PRT
<213> Taxus cuspidata

<400> 56

Met Glu Lys Gly Asn Ala Ser Asp Val Pro Glu Leu His Val Gln Ile
1 5 10 15

Cys Glu Arg Val Met Val Lys Pro Cys Val Pro Ser Pro Ser Pro Asn
20 25 30

Leu Val Leu Gln Leu Ser Ala Val Asp Arg Leu Pro Gly Met Lys Phe
35 40 45

Ala Thr Phe Ser Ala Val Leu Val Tyr Asn Ala Ser Ser His Ser Ile
50 55 60

Phe Ala Asn Pro Ala Gln Ile Ile Arg Gln Ala Leu Ser Lys Val Leu
65 70 75 80

Gln Tyr Tyr Pro Ala Phe Ala Gly Arg Ile Arg Gln Lys Glu Asn Glu
85 90 95

Glu Leu Glu Val Glu Cys Thr Gly Glu Gly Ala Leu Phe Val Glu Ala
100 105 110

Leu Val Asp Asn Asp Leu Ser Val Leu Arg Asp Leu Asp Ala Gln Asn
115 120 125

Ala Ser Tyr Glu Gln Leu Leu Phe Ser Leu Pro Pro Asn Ile Gln Val
130 135 140

Gln Asp Leu His Pro Leu Ile Leu Gln Val Thr Arg Phe Thr Cys Gly
145 150 155 160

Gly Phe Val Val Gly Val Gly Phe His His Gly Ile Cys Asp Ala Arg
165 170 175

Gly Gly Thr Gln Phe Leu Gln Gly Leu Ala Asp Met Ala Arg Gly Glu
180 185 190

Thr Lys Pro Leu Val Glu Pro Val Trp Asn Arg Glu Leu Ile Lys Pro
195 200 205

Glu Asp Leu Met His Leu Gln Phe His Lys Phe Gly Leu Ile Arg Gln
210 215 220

Pro Leu Lys Leu Asp Glu Ile Cys Gln Ala Ser Phe Thr Ile Asn Ser
225 230 235 240

Glu Ile Ile Asn Tyr Ile Lys Gln Cys Val Ile Glu Glu Cys Asn Glu
245 250 255

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Ile Phe Ser Ala Phe Glu Val Val Val Ala Leu Thr Trp Ile Ala Arg
            260                 265                 270

Thr Lys Ala Phe Gln Ile Pro His Asn Glu Asn Val Met Met Leu Phe
        275                 280                 285

Gly Met Asp Ala Arg Lys Tyr Phe Asn Pro Pro Leu Pro Lys Gly Tyr
    290                 295                 300

Tyr Gly Asn Ala Ile Gly Thr Ser Cys Val Ile Glu Asn Val Gln Asp
305                 310                 315                 320

Leu Leu Asn Gly Ser Leu Ser Arg Ala Val Met Ile Thr Lys Lys Ser
                325                 330                 335

Lys Ile Pro Leu Ile Glu Asn Leu Arg Ser Arg Ile Val Ala Asn Gln
            340                 345                 350

Ser Gly Val Asp Glu Glu Ile Lys His Glu Asn Val Val Gly Phe Gly
        355                 360                 365

Asp Trp Arg Arg Leu Gly Phe His Glu Val Asp Phe Gly Ser Gly Asp
    370                 375                 380

Ala Val Asn Ile Ser Pro Ile Gln Gln Arg Leu Glu Asp Asp Gln Leu
385                 390                 395                 400

Ala Met Arg Asn Tyr Phe Leu Phe Leu Arg Pro Tyr Lys Asp Met Pro
                405                 410                 415

Asn Gly Ile Lys Ile Leu Met Phe Met Asp Pro Ser Arg Val Lys Leu
            420                 425                 430

Phe Lys Asp Glu Met Glu Ala Met Ile Ile Lys Tyr Met Pro Lys Ala
        435                 440                 445
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<210> 57
<211> 1317
<212> DNA
<213> Taxus cuspidata

<400> 57
atggagaagt tacatgtgga tatcattgag agagtgaagg tggcgccatg ccttccatcg 60

tccaaagaaa ttctccagct ctccagcctc gacaacatac tcagatgtta tgtcagcgta 120

ttgttcgtct acgacagggt ttcaactgtt tctgcaaatc ctgcaaaaac aattcgagag 180

gctctctcca aggttttggt ttattattca ccttttgctg gaaggctcag aaacaaagaa 240

aatggggatc ttgaagtgga gtgcagtggg gagggtgctg tctttgtgga agccatggcg 300

gacaacgagc tttcagtctt acaagatttg gatgagtact gtacatcgct taaacagcta 360

atttttacag taccaatgga tacgaaaatt gaagacctcc atcttctaag tgttcaggta 420

actagtttta catgtggggg atttgttgtg ggaataagtt tctaccatac tatatgtgat 480

ggaaaaggac tgggccagtt tcttcaaggc atgagtgaga tttccaaggg agcatttaaa 540

ccctcactag aaccagtatg gaatagagaa atggtgaagc ctgaacacct tatgttcctc 600

cagtttaata attttgaatt cgtaccacat cctcttaaat ttaagaagat tgttaaagca 660

tctattgaaa ttaactttga gacaataaat tgtttcaagc aatgcatgat ggaagaatgt 720

aaagaaaatt tctctacatt tgaaattgta gcagcactga tttggctagc caagacaaag 780

tctttccaaa ttccagatag tgagaatgtg aaacttatgt ttgcagtcga catgaggaca 840

tcgtttgacc ccctcttcc aaagggatat tatggtaatg ttattggtat tgcaggtgca 900

atagataatg tcaaagaact cttaagtgga tcaattttgc gtgctctaat tattatccaa 960

aagacaattt tctctttaaa agataatttc atatcaagaa gattgatgaa accatctaca 1020

ttggatgtga atatgaagca tgaaaatgta gttctcttag gggattggag gaatttggga 1080

tattatgagg cagattgtgg gtgtggaaat ctatcaaatg taattcccat ggatcaacaa 1140

atagagcatg agtcacctgt gcaaagtaga tttatgttgc ttcgatcatc caagaacatg 1200

caaaatggaa tcaagatact aatgtccatg cctgaatcaa tggcgaaacc attcaaaagt 1260

gaaatgaaat tcacaataaa aaaatatgtg actggagcgt gtttctctga gttatga 1317

<210> 58
<211> 438
<212> PRT
<213> Taxus cuspidata

<400> 58

Met Glu Lys Leu His Val Asp Ile Ile Glu Arg Val Lys Val Ala Pro
1 5 10 15

Cys Leu Pro Ser Ser Lys Glu Ile Leu Gln Leu Ser Ser Leu Asp Asn
20 25 30

Ile Leu Arg Cys Tyr Val Ser Val Leu Phe Val Tyr Asp Arg Val Ser
35 40 45

Thr Val Ser Ala Asn Pro Ala Lys Thr Ile Arg Glu Ala Leu Ser Lys
50 55 60

Val Leu Val Tyr Tyr Ser Pro Phe Ala Gly Arg Leu Arg Asn Lys Glu
65 70 75 80

Asn Gly Asp Leu Glu Val Glu Cys Ser Gly Glu Gly Ala Val Phe Val
85 90 95

Glu Ala Met Ala Asp Asn Glu Leu Ser Val Leu Gln Asp Leu Asp Glu
100 105 110

Tyr Cys Thr Ser Leu Lys Gln Leu Ile Phe Thr Val Pro Met Asp Thr
115 120 125

Lys Ile Glu Asp Leu His Leu Leu Ser Val Gln Val Thr Ser Phe Thr
130 135 140

Cys Gly Gly Phe Val Val Gly Ile Ser Phe Tyr His Thr Ile Cys Asp
145 150 155 160

Gly Lys Gly Leu Gly Gln Phe Leu Gln Gly Met Ser Glu Ile Ser Lys
165 170 175

Gly Ala Phe Lys Pro Ser Leu Glu Pro Val Trp Asn Arg Glu Met Val
180 185 190

Lys Pro Glu His Leu Met Phe Leu Gln Phe Asn Asn Phe Glu Phe Val
195 200 205

Pro His Pro Leu Lys Phe Lys Lys Ile Val Lys Ala Ser Ile Glu Ile
210 215 220

Asn Phe Glu Thr Ile Asn Cys Phe Lys Gln Cys Met Met Glu Glu Cys
225 230 235 240

Lys Glu Asn Phe Ser Thr Phe Glu Ile Val Ala Ala Leu Ile Trp Leu
245 250 255

Ala Lys Thr Lys Ser Phe Gln Ile Pro Asp Ser Glu Asn Val Lys Leu
260 265 270

Met Phe Ala Val Asp Met Arg Thr Ser Phe Asp Pro Pro Leu Pro Lys
275 280 285

Gly Tyr Tyr Gly Asn Val Ile Gly Ile Ala Gly Ala Ile Asp Asn Val
290 295 300

Lys Glu Leu Leu Ser Gly Ser Ile Leu Arg Ala Leu Ile Ile Ile Gln
305 310 315 320

Lys Thr Ile Phe Ser Leu Lys Asp Asn Phe Ile Ser Arg Arg Leu Met
325 330 335

Lys Pro Ser Thr Leu Asp Val Asn Met Lys His Glu Asn Val Val Leu
340 345 350

Leu Gly Asp Trp Arg Asn Leu Gly Tyr Tyr Glu Ala Asp Cys Gly Cys
355 360 365

Gly Asn Leu Ser Asn Val Ile Pro Met Asp Gln Gln Ile Glu His Glu
370 375 380

Ser Pro Val Gln Ser Arg Phe Met Leu Leu Arg Ser Ser Lys Asn Met
385 390 395 400

Gln Asn Gly Ile Lys Ile Leu Met Ser Met Pro Glu Ser Met Ala Lys
405 410 415

Pro Phe Lys Ser Glu Met Lys Phe Thr Ile Lys Lys Tyr Val Thr Gly
420 425 430

Ala Cys Phe Ser Glu Leu
435

<210> 59
<211> 331
<212> PRT
<213> Arabidopsis thaliana

<400> 59

Met Ser Gln Ile Leu Glu Asn Pro Asn Pro Asn Glu Leu Asn Lys Leu
1 5 10 15

His Pro Phe Glu Phe His Glu Val Ser Asp Val Pro Leu Thr Val Gln
20 25 30

Leu Thr Phe Phe Glu Cys Gly Gly Leu Ala Leu Gly Ile Gly Leu Ser
35 40 45

His Lys Leu Cys Asp Ala Leu Ser Gly Leu Ile Phe Val Asn Ser Trp
50 55 60

Ala Ala Phe Ala Arg Gly Gln Thr Asp Glu Ile Ile Thr Pro Ser Phe
65 70 75 80

Asp Leu Ala Lys Met Phe Pro Pro Cys Asp Ile Glu Asn Leu Asn Met
85 90 95

Ala Thr Gly Ile Thr Lys Glu Asn Ile Val Thr Arg Arg Phe Val Phe
100 105 110

Leu Arg Ser Ser Val Glu Ser Leu Arg Glu Arg Phe Ser Gly Asn Lys
115 120 125

Lys Ile Arg Ala Thr Arg Val Glu Val Leu Ser Val Phe Ile Trp Ser
130 135 140

Arg Phe Met Ala Ser Thr Asn His Asp Asp Lys Thr Gly Lys Ile Tyr
145 150 155 160

Thr Leu Ile His Pro Val Asn Leu Arg Arg Gln Ala Asp Pro Asp Ile
165 170 175

Pro Asp Asn Met Phe Gly Asn Ile Met Arg Phe Ser Val Thr Val Pro
180 185 190

Met Met Ile Ile Asn Glu Asn Asp Glu Glu Lys Ala Ser Leu Val Asp
195 200 205

Gln Met Arg Glu Glu Ile Arg Lys Ile Asp Ala Val Tyr Val Lys Lys
210 215 220

Leu Gln Glu Asp Asn Arg Gly His Leu Glu Phe Leu Asn Lys Gln Ala
225 230 235 240

Ser Gly Phe Val Asn Gly Glu Ile Val Ser Phe Ser Phe Thr Ser Leu
245 250 255

Cys Lys Phe Pro Val Tyr Glu Ala Asp Phe Gly Trp Gly Lys Pro Leu
260 265 270

Trp Val Ala Ser Ala Arg Met Ser Tyr Lys Asn Leu Val Ala Phe Ile
275 280 285

Asp Thr Lys Glu Gly Asp Gly Ile Glu Ala Trp Ile Asn Leu Asp Gln
290 295 300

Asn Asp Met Ser Arg Phe Glu Ala Asp Glu Glu Leu Leu Arg Tyr Val
305 310 315 320

Ser Ser Asn Pro Ser Val Met Val Ser Val Ser
325 330

<210> 60
<211> 435
<212> PRT
<213> Arabidopsis thaliana

<400> 60

Met Glu Ala Lys Leu Glu Val Thr Gly Lys Glu Val Ile Lys Pro Ala
1 5 10 15

Ser Pro Ser Pro Arg Asp Arg Leu Gln Leu Ser Ile Leu Asp Leu Tyr
20 25 30

Cys Pro Gly Ile Tyr Val Ser Thr Ile Phe Phe Tyr Asp Leu Ile Thr
35 40 45

Glu Ser Ser Glu Val Phe Ser Glu Asn Leu Lys Leu Ser Leu Ser Glu
50 55 60

Thr Leu Ser Arg Phe Tyr Pro Leu Ala Gly Arg Ile Glu Gly Leu Ser
65 70 75 80

Ile Ser Cys Asn Asp Glu Gly Ala Val Phe Thr Glu Ala Arg Thr Asp
85 90 95

Leu Leu Leu Pro Asp Phe Leu Arg Asn Leu Asn Thr Asp Ser Leu Ser

100 105 110

Gly Phe Leu Pro Thr Leu Ala Ala Gly Glu Ser Pro Ala Ala Trp Pro
115 120 125

Leu Leu Ser Val Lys Val Thr Phe Phe Gly Ser Gly Ser Gly Val Ala
130 135 140

Val Ser Val Ser Val Ser His Lys Ile Cys Asp Ile Ala Ser Leu Val
145 150 155 160

Thr Phe Val Lys Asp Trp Ala Thr Thr Thr Ala Lys Gly Lys Ser Asn
165 170 175

Ser Thr Ile Glu Phe Ala Glu Thr Thr Ile Tyr Pro Pro Pro Pro Ser
180 185 190

His Met Tyr Glu Gln Phe Pro Ser Thr Asp Ser Asp Ser Asn Ile Thr
195 200 205

Ser Lys Tyr Val Leu Lys Arg Phe Val Phe Glu Pro Ser Lys Ile Ala
210 215 220

Glu Leu Lys His Lys Ala Ala Ser Glu Ser Val Pro Val Pro Thr Arg
225 230 235 240

Val Glu Ala Ile Met Ser Leu Ile Trp Arg Cys Ala Arg Asn Ser Ser
245 250 255

Arg Ser Asn Leu Leu Ile Pro Arg Gln Ala Val Met Trp Gln Ala Met
260 265 270

Asp Ile Arg Leu Arg Ile Pro Ser Ser Val Ala Pro Lys Asp Val Ile
275 280 285

Gly Asn Leu Gln Ser Gly Phe Ser Leu Lys Lys Asp Ala Glu Ser Glu
290 295 300

Phe Glu Ile Pro Glu Ile Val Ala Thr Phe Arg Lys Asn Lys Glu Arg
305 310 315 320

Val Asn Glu Met Ile Lys Glu Ser Leu Gln Gly Asn Thr Ile Gly Gln
325 330 335

Ser Leu Leu Ser Leu Met Ala Glu Thr Val Ser Glu Ser Thr Glu Ile
340 345 350

Asp Arg Tyr Ile Met Ser Ser Trp Cys Arg Lys Pro Phe Tyr Glu Val
355 360 365

Asp Phe Gly Ser Gly Ser Pro Val Trp Val Gly Tyr Ala Ser His Thr
370 375 380

Ile Tyr Asp Asn Met Val Gly Val Val Leu Ile Asp Ser Lys Glu Gly
385 390 395 400

Asp Gly Val Glu Ala Trp Ile Ser Leu Pro Glu Glu Asp Met Ser Val
405 410 415

Phe Val Asp Asp Gln Glu Leu Leu Ala Tyr Ala Val Leu Asn Pro Pro
420 425 430

Val Val Ala
435

<210> 61
<211> 458
<212> PRT
<213> Arabidopsis thaliana

<400> 61

Met Pro Met Leu Met Ala Thr Arg Ile Asp Ile Ile Gln Lys Leu Asn
1 5 10 15

Val Tyr Pro Arg Phe Gln Asn His Asp Lys Lys Lys Leu Ile Thr Leu
20 25 30

Ser Asn Leu Asp Arg Gln Cys Pro Leu Leu Met Tyr Ser Val Phe Phe
35 40 45

Tyr Lys Asn Thr Thr Thr Arg Asp Phe Asp Ser Val Phe Ser Asn Leu
50 55 60

Lys Leu Gly Leu Glu Glu Thr Met Ser Val Trp Tyr Pro Ala Ala Gly
65 70 75 80

Arg Leu Gly Leu Asp Gly Gly Gly Cys Lys Leu Asn Ile Arg Cys Asn
85 90 95

Asp Gly Gly Ala Val Met Val Glu Ala Val Ala Thr Gly Val Lys Leu
100 105 110

Ser Glu Leu Gly Asp Leu Thr Gln Tyr Asn Glu Phe Tyr Glu Asn Leu
115 120 125

Val Tyr Lys Pro Ser Leu Asp Gly Asp Phe Ser Val Met Pro Leu Val
130 135 140

Val Ala Gln Val Thr Arg Phe Ala Cys Gly Gly Tyr Ser Ile Gly Ile
145 150 155 160

Gly Thr Ser His Ser Leu Phe Asp Gly Ile Ser Ala Tyr Glu Phe Ile
165 170 175

His Ala Trp Ala Ser Asn Ser His Ile His Asn Lys Ser Asn Ser Lys
180 185 190

Ile Thr Asn Lys Lys Glu Asp Val Val Ile Lys Pro Val His Asp Arg
195 200 205

Arg Asn Leu Leu Val Asn Arg Asp Ala Val Arg Glu Thr Asn Ala Ala
210 215 220

Ala Ile Cys His Leu Tyr Gln Leu Ile Lys Gln Ala Met Met Thr Tyr
225 230 235 240

Gln Glu Gln Asn Arg Asn Leu Glu Leu Pro Asp Ser Gly Phe Val Ile
245 250 255

Lys Thr Phe Glu Leu Asn Gly Asp Ala Ile Glu Ser Met Lys Lys Lys
260 265 270

Ser Leu Glu Gly Phe Met Cys Ser Ser Phe Glu Phe Leu Ala Ala His
275 280 285

Leu Trp Lys Ala Arg Thr Arg Ala Leu Gly Leu Arg Arg Asp Ala Met
290 295 300

Val Cys Leu Gln Phe Ala Val Asp Ile Arg Lys Arg Thr Glu Thr Pro

305 310 315 320

Leu Pro Glu Gly Phe Ser Gly Asn Ala Tyr Val Leu Ala Ser Val Ala
325 330 335

Ser Thr Ala Arg Glu Leu Leu Glu Glu Leu Thr Leu Glu Ser Ile Val
340 345 350

Asn Lys Ile Arg Glu Ala Lys Lys Ser Ile Asp Gln Gly Tyr Ile Asn
355 360 365

Ser Tyr Met Glu Ala Leu Gly Gly Ser Asn Asp Gly Asn Leu Pro Pro
370 375 380

Leu Lys Glu Leu Thr Leu Ile Ser Asp Trp Thr Lys Met Pro Phe His
385 390 395 400

Asn Val Gly Phe Gly Asn Gly Gly Glu Pro Ala Asp Tyr Met Ala Pro
405 410 415

Leu Cys Pro Pro Val Pro Gln Val Ala Tyr Phe Met Lys Asn Pro Lys
420 425 430

Asp Ala Lys Gly Val Leu Val Arg Ile Gly Leu Asp Pro Arg Asp Val
435 440 445

Asn Gly Phe Ser Asn His Phe Leu Asp Cys
450 455

<210> 62
<211> 436
<212> PRT
<213> Arabidopsis thaliana

<400> 62

Met Glu Lys Asn Val Glu Ile Leu Ser Arg Glu Ile Val Lys Pro Ser
1 5 10 15

Ser Pro Thr Pro Asp Asp Lys Arg Ile Leu Asn Leu Ser Leu Leu Asp
20 25 30

Ile Leu Ser Ser Pro Met Tyr Thr Gly Ala Leu Leu Phe Tyr Ala Ala
35 40 45

```
Asp Pro Gln Asn Leu Leu Gly Phe Ser Thr Glu Glu Thr Ser Leu Lys
    50                  55                  60

Leu Lys Lys Ser Leu Ser Lys Thr Leu Pro Ile Phe Tyr Pro Leu Ala
65                  70                  75                  80

Gly Arg Ile Ile Gly Ser Phe Val Glu Cys Asn Asp Glu Gly Ala Val
                85                  90                  95

Phe Ile Glu Ala Arg Val Asp His Leu Leu Ser Glu Phe Leu Lys Cys
            100                 105                 110

Pro Val Pro Glu Ser Leu Glu Leu Leu Ile Pro Val Glu Ala Lys Ser
        115                 120                 125

Arg Glu Ala Val Thr Trp Pro Val Leu Leu Ile Gln Ala Asn Phe Phe
    130                 135                 140

Ser Cys Gly Gly Leu Val Ile Thr Ile Cys Val Ser His Lys Ile Thr
145                 150                 155                 160

Asp Ala Thr Ser Leu Ala Met Phe Ile Arg Gly Trp Ala Glu Ser Ser
                165                 170                 175

Arg Gly Leu Gly Ile Thr Leu Ile Pro Ser Phe Thr Ala Ser Glu Val
            180                 185                 190

Phe Pro Lys Pro Leu Asp Glu Leu Pro Ser Lys Pro Met Asp Arg Lys
        195                 200                 205

Glu Glu Val Glu Glu Met Ser Cys Val Thr Lys Arg Phe Val Phe Asp
    210                 215                 220

Ala Ser Lys Ile Lys Lys Leu Arg Ala Lys Ala Ser Arg Asn Leu Val
225                 230                 235                 240

Lys Asn Pro Thr Arg Val Glu Ala Val Thr Ala Leu Phe Trp Arg Cys
                245                 250                 255

Val Thr Lys Val Ser Arg Leu Ser Ser Leu Thr Pro Arg Thr Ser Val
            260                 265                 270
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Leu Gln Ile Leu Val Asn Leu Arg Gly Lys Val Asp Ser Leu Cys Glu
        275                 280                 285

Asn Thr Ile Gly Asn Met Leu Ser Leu Met Ile Leu Lys Asn Glu Glu
    290                 295                 300

Ala Ala Ile Glu Arg Ile Gln Asp Val Val Asp Glu Ile Arg Arg Ala
305                 310                 315                 320

Lys Glu Ile Phe Ser Leu Asn Cys Lys Glu Met Ser Lys Ser Ser Ser
                325                 330                 335

Arg Ile Phe Glu Leu Leu Glu Glu Ile Gly Lys Val Tyr Gly Arg Gly
            340                 345                 350

Asn Glu Met Asp Leu Trp Met Ser Asn Ser Trp Cys Lys Leu Gly Leu
        355                 360                 365

Tyr Asp Ala Asp Phe Gly Trp Gly Lys Pro Val Trp Val Thr Gly Arg
    370                 375                 380

Gly Thr Ser His Phe Lys Asn Leu Met Leu Leu Ile Asp Thr Lys Asp
385                 390                 395                 400

Gly Glu Gly Ile Glu Ala Trp Ile Thr Leu Thr Glu Glu Gln Met Ser
                405                 410                 415

Leu Phe Glu Cys Asp Gln Glu Leu Leu Glu Ser Ala Ser Leu Asn Pro
            420                 425                 430

Pro Val Leu Ile
        435


<210>  63
<211>  482
<212>  PRT
<213>  Arabidopsis thaliana

<400>  63

Met Pro Ser Leu Glu Lys Ser Val Thr Ile Ile Ser Arg Asn Arg Val
1               5                   10                  15

Phe Pro Asp Gln Lys Ser Thr Leu Val Asp Leu Lys Leu Ser Val Ser
            20                  25                  30
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Asp Leu Pro Met Leu Ser Cys His Tyr Ile Gln Lys Gly Cys Leu Phe
35 40 45

Thr Cys Pro Asn Leu Pro Leu Pro Ala Leu Ile Ser His Leu Lys His
50 55 60

Ser Leu Ser Ile Thr Leu Thr His Phe Pro Pro Leu Ala Gly Arg Leu
65 70 75 80

Ser Thr Ser Ser Ser Gly His Val Phe Leu Thr Cys Asn Asp Ala Gly
85 90 95

Ala Asp Phe Val Phe Ala Gln Ala Lys Ser Ile His Val Ser Asp Val
100 105 110

Ile Ala Gly Ile Asp Val Pro Asp Val Val Lys Glu Phe Phe Thr Tyr
115 120 125

Asp Arg Ala Val Ser Tyr Glu Gly His Asn Arg Pro Ile Leu Ala Val
130 135 140

Gln Val Thr Glu Leu Asn Asp Gly Val Phe Ile Gly Cys Ser Val Asn
145 150 155 160

His Ala Val Thr Asp Gly Thr Ser Leu Trp Asn Phe Ile Asn Thr Phe
165 170 175

Ala Glu Val Ser Arg Gly Ala Lys Asn Val Thr Arg Gln Pro Asp Phe
180 185 190

Thr Arg Glu Ser Val Leu Ile Ser Pro Ala Val Leu Lys Val Pro Gln
195 200 205

Gly Gly Pro Lys Val Thr Phe Asp Glu Asn Ala Pro Leu Arg Glu Arg
210 215 220

Ile Phe Ser Phe Ser Arg Glu Ser Ile Gln Glu Leu Lys Ala Val Val
225 230 235 240

Asn Lys Lys Lys Trp Leu Thr Val Asp Asn Gly Glu Ile Asp Gly Val
245 250 255

Glu Leu Leu Gly Lys Gln Ser Asn Asp Lys Leu Asn Gly Lys Glu Asn
260 265 270

Gly Ile Leu Thr Glu Met Leu Glu Ser Leu Phe Gly Arg Asn Asp Ala
275 280 285

Val Ser Lys Pro Val Ala Val Glu Ile Ser Ser Phe Gln Ser Leu Cys
290 295 300

Ala Leu Leu Trp Arg Ala Ile Thr Arg Ala Arg Lys Leu Pro Ser Ser
305 310 315 320

Lys Thr Thr Thr Phe Arg Met Ala Val Asn Cys Arg His Arg Leu Ser
325 330 335

Pro Lys Leu Asn Pro Glu Tyr Phe Gly Asn Ala Ile Gln Ser Val Pro
340 345 350

Thr Phe Ala Thr Ala Ala Glu Val Leu Ser Arg Asp Leu Lys Trp Cys
355 360 365

Ala Asp Gln Leu Asn Gln Ser Val Ala Ala His Gln Asp Gly Arg Ile
370 375 380

Arg Ser Val Val Ala Asp Trp Glu Ala Asn Pro Arg Cys Phe Pro Leu
385 390 395 400

Gly Asn Ala Asp Gly Ala Ser Val Thr Met Gly Ser Ser Pro Arg Phe
405 410 415

Pro Met Tyr Asp Asn Asp Phe Gly Trp Gly Arg Pro Val Ala Val Arg
420 425 430

Ser Gly Arg Ser Asn Lys Phe Asp Gly Lys Ile Ser Ala Phe Pro Gly
435 440 445

Arg Glu Gly Asn Gly Thr Val Asp Leu Glu Val Val Leu Ser Pro Glu
450 455 460

Thr Met Ala Gly Ile Glu Ser Asp Gly Glu Phe Met Arg Tyr Val Thr
465 470 475 480

Asn Lys

<210> 64
<211> 461
<212> PRT
<213> Arabidopsis thaliana

<400> 64

Met Ala Ser Cys Ile Gln Glu Leu His Phe Thr His Leu His Ile Pro
1 5 10 15

Val Thr Ile Asn Gln Gln Phe Leu Val His Pro Ser Ser Pro Thr Pro
20 25 30

Ala Asn Gln Ser Pro His His Ser Leu Tyr Leu Ser Asn Leu Asp Asp
35 40 45

Ile Ile Gly Ala Arg Val Phe Thr Pro Ser Val Tyr Phe Tyr Pro Ser
50 55 60

Thr Asn Asn Arg Glu Ser Phe Val Leu Lys Arg Leu Gln Asp Ala Leu
65 70 75 80

Ser Glu Val Leu Val Pro Tyr Tyr Pro Leu Ser Gly Arg Leu Arg Glu
85 90 95

Val Glu Asn Gly Lys Leu Glu Val Phe Phe Gly Glu Glu Gln Gly Val
100 105 110

Leu Met Val Ser Ala Asn Ser Ser Met Asp Leu Ala Asp Leu Gly Asp
115 120 125

Leu Thr Val Pro Asn Pro Ala Trp Leu Pro Leu Ile Phe Arg Asn Pro
130 135 140

Gly Glu Glu Ala Tyr Lys Ile Leu Glu Met Pro Leu Leu Ile Ala Gln
145 150 155 160

Val Thr Phe Phe Thr Cys Gly Gly Phe Ser Leu Gly Ile Arg Leu Cys
165 170 175

His Cys Ile Cys Asp Gly Phe Gly Ala Met Gln Phe Leu Gly Ser Trp
180 185 190

Ala Ala Thr Ala Lys Thr Gly Lys Leu Ile Ala Asp Pro Glu Pro Val
195 200 205

Trp Asp Arg Glu Thr Phe Lys Pro Arg Asn Pro Pro Met Val Lys Tyr
210 215 220

Pro His His Glu Tyr Leu Pro Ile Glu Glu Arg Ser Asn Leu Thr Asn
225 230 235 240

Ser Leu Trp Asp Thr Lys Pro Leu Gln Lys Cys Tyr Arg Ile Ser Lys
245 250 255

Glu Phe Gln Cys Arg Val Lys Ser Ile Ala Gln Gly Glu Asp Pro Thr
260 265 270

Leu Val Cys Ser Thr Phe Asp Ala Met Ala Ala His Ile Trp Arg Ser
275 280 285

Trp Val Lys Ala Leu Asp Val Lys Pro Leu Asp Tyr Asn Leu Arg Leu
290 295 300

Thr Phe Ser Val Asn Val Arg Thr Arg Leu Glu Thr Leu Lys Leu Arg
305 310 315 320

Lys Gly Phe Tyr Gly Asn Val Val Cys Leu Ala Cys Ala Met Ser Ser
325 330 335

Val Glu Ser Leu Ile Asn Asp Ser Leu Ser Lys Thr Thr Arg Leu Val
340 345 350

Gln Asp Ala Arg Leu Arg Val Ser Glu Asp Tyr Leu Arg Ser Met Val
355 360 365

Asp Tyr Val Asp Val Lys Arg Pro Lys Arg Leu Glu Phe Gly Gly Lys
370 375 380

Leu Thr Ile Thr Gln Trp Thr Arg Phe Glu Met Tyr Glu Thr Ala Asp
385 390 395 400

Phe Gly Trp Gly Lys Pro Val Tyr Ala Gly Pro Ile Asp Leu Arg Pro
405 410 415

Thr Pro Gln Val Cys Val Leu Leu Pro Gln Gly Gly Val Glu Ser Gly
420 425 430

Asn Asp Gln Ser Met Val Val Cys Leu Cys Leu Pro Pro Thr Ala Val
435 440 445

His Thr Phe Thr Arg Leu Leu Ser Leu Asn Asp His Lys
450 455 460

<210> 65
<211> 572
<212> PRT
<213> Arabidopsis thaliana

<400> 65

Met Ala Ala Val Ser Val Ala Ser Ala Glu Leu Pro Pro Pro Pro Gln
1 5 10 15

Asp Gly Glu Thr Leu Ser Asn Val Pro Gln Thr Leu Ser Gly Glu Asp
20 25 30

Cys Lys Lys Gln Arg Ile Gln Arg Pro Lys Ser Lys Asn Ala Glu Lys
35 40 45

Cys Thr Val Lys Cys Val Asn Thr Cys Ile Arg Ser Gly Asp Gly Glu
50 55 60

Gly Pro Ile Asn Ile Arg Arg Phe Gln Arg Ile Ala Trp Gln Ile Glu
65 70 75 80

Gly Ile Gln Val Thr Val Ser Cys Phe Phe Val Thr Cys Gly Lys Thr
85 90 95

Arg Ser Ser Ser Asn Asn Pro His His Thr Thr Phe Phe Ile Leu Ser
100 105 110

Glu Asn Asn Asn Gln Met Gly Glu Ala Ala Glu Gln Ala Arg Gly Phe
115 120 125

His Val Thr Thr Thr Arg Lys Gln Val Ile Thr Ala Ala Leu Pro Leu
130 135 140

Gln Asp His Trp Leu Pro Leu Ser Asn Leu Asp Leu Leu Leu Pro Pro

145 150 155 160

Leu Asn Val His Val Cys Phe Cys Tyr Lys Lys Pro Leu His Phe Thr
165 170 175

Asn Thr Val Ala Tyr Glu Thr Leu Lys Thr Ala Leu Ala Glu Thr Leu
180 185 190

Val Ser Tyr Tyr Ala Phe Ala Gly Glu Leu Val Thr Asn Pro Thr Gly
195 200 205

Glu Pro Glu Ile Leu Cys Asn Asn Arg Gly Val Asp Phe Val Glu Ala
210 215 220

Gly Ala Asp Val Glu Leu Arg Glu Leu Asn Leu Tyr Asp Pro Asp Glu
225 230 235 240

Ser Ile Ala Lys Leu Val Pro Ile Lys Lys His Gly Val Ile Ala Ile
245 250 255

Gln Val Thr Gln Leu Lys Cys Gly Ser Ile Val Val Gly Cys Thr Phe
260 265 270

Asp His Arg Val Ala Asp Ala Tyr Ser Met Asn Met Phe Leu Leu Ser
275 280 285

Trp Ala Glu Ile Ser Arg Ser Asp Val Pro Ile Ser Cys Val Pro Ser
290 295 300

Phe Arg Arg Ser Leu Leu Asn Pro Arg Arg Pro Leu Val Met Asp Pro
305 310 315 320

Ser Ile Asp Gln Ile Tyr Met Pro Val Thr Ser Leu Pro Pro Pro Gln
325 330 335

Glu Thr Thr Asn Pro Glu Asn Leu Leu Ala Ser Arg Ile Tyr Tyr Ile
340 345 350

Lys Ala Asn Ala Leu Gln Glu Leu Gln Thr Leu Ala Ser Ser Ser Lys
355 360 365

Asn Gly Lys Arg Thr Lys Leu Glu Ser Phe Ser Ala Phe Leu Trp Lys
370 375 380

Leu Val Ala Glu His Ala Ala Lys Asp Pro Val Pro Ile Lys Thr Ser
385 390 395 400

Lys Leu Gly Ile Val Val Asp Gly Arg Arg Arg Leu Met Glu Lys Glu
405 410 415

Asn Asn Thr Tyr Phe Gly Asn Val Leu Ser Val Pro Phe Gly Gly Gln
420 425 430

Arg Ile Asp Asp Leu Ile Ser Lys Pro Leu Ser Trp Val Thr Glu Glu
435 440 445

Val His Arg Phe Leu Lys Lys Ser Val Thr Lys Glu His Phe Leu Asn
450 455 460

Leu Ile Asp Trp Val Glu Thr Cys Arg Pro Thr Pro Ala Val Ser Arg
465 470 475 480

Ile Tyr Ser Val Gly Ser Asp Asp Gly Pro Ala Phe Val Val Ser Ser
485 490 495

Gly Arg Ser Phe Pro Val Asn Gln Val Asp Phe Gly Trp Gly Ser Pro
500 505 510

Val Phe Gly Ser Tyr His Phe Pro Trp Gly Gly Ser Ala Gly Tyr Val
515 520 525

Met Pro Met Pro Ser Ser Val Asp Asp Arg Asp Trp Met Val Tyr Leu
530 535 540

His Leu Thr Lys Gly Gln Leu Arg Phe Ile Glu Glu Glu Ala Ser His
545 550 555 560

Val Leu Lys Pro Ile Asp Asn Asp Tyr Leu Lys Ile
565 570

<210> 66
<211> 433
<212> PRT
<213> Clarkia breweri

<400> 66

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Met Asn Val Thr Met His Ser Lys Lys Leu Leu Lys Pro Ser Ile Pro
1               5                  10                  15

Thr Pro Asn His Leu Gln Lys Leu Asn Leu Ser Leu Leu Asp Gln Ile
            20                  25                  30

Gln Ile Pro Phe Tyr Val Gly Leu Ile Phe His Tyr Glu Thr Leu Ser
        35                  40                  45

Asp Asn Ser Asp Ile Thr Leu Ser Lys Leu Glu Ser Ser Leu Ser Glu
    50                  55                  60

Thr Leu Thr Leu Tyr Tyr His Val Ala Gly Arg Tyr Asn Gly Thr Asp
65                  70                  75                  80

Cys Val Ile Glu Cys Asn Asp Gln Gly Ile Gly Tyr Val Glu Thr Ala
                85                  90                  95

Phe Asp Val Glu Leu His Gln Phe Leu Leu Gly Glu Glu Ser Asn Asn
            100                 105                 110

Leu Asp Leu Leu Val Gly Leu Ser Gly Phe Leu Ser Glu Thr Glu Thr
        115                 120                 125

Pro Pro Leu Ala Ala Ile Gln Leu Asn Met Phe Lys Cys Gly Gly Leu
    130                 135                 140

Val Ile Gly Ala Gln Phe Asn His Ile Ile Gly Asp Met Phe Thr Met
145                 150                 155                 160

Ser Thr Phe Met Asn Ser Trp Ala Lys Ala Cys Arg Val Gly Ile Lys
                165                 170                 175

Glu Val Ala His Pro Thr Phe Gly Leu Ala Pro Leu Met Pro Ser Ala
            180                 185                 190

Lys Val Leu Asn Ile Pro Pro Pro Pro Ser Phe Glu Gly Val Lys Phe
        195                 200                 205

Val Ser Lys Arg Phe Val Phe Asn Glu Asn Ala Ile Thr Arg Leu Arg
    210                 215                 220

Lys Glu Ala Thr Glu Glu Asp Gly Asp Gly Asp Asp Asp Gln Lys Lys
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225 230 235 240

Lys Arg Pro Ser Arg Val Asp Leu Val Thr Ala Phe Leu Ser Lys Ser
245 250 255

Leu Ile Glu Met Asp Cys Ala Lys Lys Glu Gln Thr Lys Ser Arg Pro
260 265 270

Ser Leu Met Val His Met Met Asn Leu Arg Lys Arg Thr Lys Leu Ala
275 280 285

Leu Glu Asn Asp Val Ser Gly Asn Phe Phe Ile Val Val Asn Ala Glu
290 295 300

Ser Lys Ile Thr Val Ala Pro Lys Ile Thr Asp Leu Thr Glu Ser Leu
305 310 315 320

Gly Ser Ala Cys Gly Glu Ile Ile Ser Glu Val Ala Lys Val Asp Asp
325 330 335

Ala Glu Val Val Ser Ser Met Val Leu Asn Ser Val Arg Glu Phe Tyr
340 345 350

Tyr Glu Trp Gly Lys Gly Glu Lys Asn Val Phe Leu Tyr Thr Ser Trp
355 360 365

Cys Arg Phe Pro Leu Tyr Glu Val Asp Phe Gly Trp Gly Ile Pro Ser
370 375 380

Leu Val Asp Thr Thr Ala Val Pro Phe Gly Leu Ile Val Leu Met Asp
385 390 395 400

Glu Ala Pro Ala Gly Asp Gly Ile Ala Val Arg Ala Cys Leu Ser Glu
405 410 415

His Asp Met Ile Gln Phe Gln Gln His His Gln Leu Leu Ser Tyr Val
420 425 430

Ser

<210> 67
<211> 450

<212> PRT
<213> Dianthus caryophyllus

<400> 67

Met Gly Ser Ser Tyr Gln Glu Ser Pro Pro Leu Leu Leu Glu Asp Leu
1 5 10 15

Lys Val Thr Ile Lys Glu Ser Thr Leu Ile Phe Pro Ser Glu Glu Thr
20 25 30

Ser Glu Arg Lys Ser Met Phe Leu Ser Asn Val Asp Gln Ile Leu Asn
35 40 45

Phe Asp Val Gln Thr Val His Phe Phe Arg Pro Asn Lys Glu Phe Pro
50 55 60

Pro Glu Met Val Ser Glu Lys Leu Arg Lys Ala Leu Val Lys Leu Met
65 70 75 80

Asp Ala Tyr Glu Phe Leu Ala Gly Arg Leu Arg Val Asp Pro Ser Ser
85 90 95

Gly Arg Leu Asp Val Asp Cys Asn Gly Ala Gly Ala Gly Phe Val Thr
100 105 110

Ala Ala Ser Asp Tyr Thr Leu Glu Glu Leu Gly Asp Leu Val Tyr Pro
115 120 125

Asn Pro Ala Phe Ala Gln Leu Val Thr Ser Gln Leu Gln Ser Leu Pro
130 135 140

Lys Asp Asp Gln Pro Leu Phe Val Phe Gln Ile Thr Ser Phe Lys Cys
145 150 155 160

Gly Gly Phe Ala Met Gly Ile Ser Thr Asn His Thr Thr Phe Asp Gly
165 170 175

Leu Ser Phe Lys Thr Phe Leu Glu Asn Leu Ala Ser Leu Leu His Glu
180 185 190

Lys Pro Leu Ser Thr Pro Pro Cys Asn Asp Arg Thr Leu Leu Lys Ala
195 200 205

Arg Asp Pro Pro Ser Val Ala Phe Pro His His Glu Leu Val Lys Phe
210 215 220

Gln Asp Cys Glu Thr Thr Thr Val Phe Glu Ala Thr Ser Glu His Leu
225 230 235 240

Asp Phe Lys Ile Phe Lys Leu Ser Ser Glu Gln Ile Lys Lys Leu Lys
245 250 255

Glu Arg Ala Ser Glu Thr Ser Asn Gly Asn Val Arg Val Thr Gly Phe
260 265 270

Asn Val Val Thr Ala Leu Val Trp Arg Cys Lys Ala Leu Ser Val Ala
275 280 285

Ala Glu Glu Gly Glu Glu Thr Asn Leu Glu Arg Glu Ser Thr Ile Leu
290 295 300

Tyr Ala Val Asp Ile Arg Gly Arg Leu Asn Pro Glu Leu Pro Pro Ser
305 310 315 320

Tyr Thr Gly Asn Ala Val Leu Thr Ala Tyr Ala Lys Glu Lys Cys Lys
325 330 335

Ala Leu Leu Glu Glu Pro Phe Gly Arg Ile Val Glu Met Val Gly Glu
340 345 350

Gly Ser Lys Arg Ile Thr Asp Glu Tyr Ala Arg Ser Ala Ile Asp Trp
355 360 365

Gly Glu Leu Tyr Lys Gly Phe Pro His Gly Glu Val Leu Val Ser Ser
370 375 380

Trp Trp Lys Leu Gly Phe Ala Glu Val Glu Tyr Pro Trp Gly Lys Pro
385 390 395 400

Lys Tyr Ser Cys Pro Val Val Tyr His Arg Lys Asp Ile Val Leu Leu
405 410 415

Phe Pro Asp Ile Asp Gly Asp Ser Lys Gly Val Tyr Val Leu Ala Ala
420 425 430

Leu Pro Ser Lys Glu Met Ser Lys Phe Gln His Trp Phe Glu Asp Thr

435 440 445

Leu Cys
450

<210> 68
<211> 439
<212> PRT
<213> Catharanthus roseus

<400> 68

Met Glu Ser Gly Lys Ile Ser Val Glu Thr Glu Thr Leu Ser Lys Thr
1 5 10 15

Leu Ile Lys Pro Ser Ser Pro Thr Pro Gln Ser Leu Ser Arg Tyr Asn
20 25 30

Leu Ser Tyr Asn Asp Gln Asn Ile Tyr Gln Thr Cys Val Ser Val Gly
35 40 45

Phe Phe Tyr Glu Asn Pro Asp Gly Ile Glu Ile Ser Thr Ile Arg Glu
50 55 60

Gln Leu Gln Asn Ser Leu Ser Lys Thr Leu Val Ser Tyr Tyr Pro Phe
65 70 75 80

Ala Gly Lys Val Val Lys Asn Asp Tyr Ile His Cys Asn Asp Asp Gly
85 90 95

Ile Glu Phe Val Glu Val Arg Ile Arg Cys Arg Met Asn Asp Ile Leu
100 105 110

Lys Tyr Glu Leu Arg Ser Tyr Ala Arg Asp Leu Val Leu Pro Lys Arg
115 120 125

Val Thr Val Gly Ser Glu Asp Thr Thr Ala Ile Val Gln Leu Ser His
130 135 140

Phe Asp Cys Gly Gly Leu Ala Val Ala Phe Gly Ile Ser His Lys Val
145 150 155 160

Ala Asp Gly Gly Thr Ile Ala Ser Phe Met Lys Asp Trp Ala Ala Ser
165 170 175

Ala Cys Tyr Leu Ser Ser Ser His His Val Pro Thr Pro Leu Leu Val
180 185 190

Ser Asp Ser Ile Phe Pro Arg Gln Asp Asn Ile Ile Cys Glu Gln Phe
195 200 205

Pro Thr Ser Lys Asn Cys Val Glu Lys Thr Phe Ile Phe Pro Pro Glu
210 215 220

Ala Ile Glu Lys Leu Lys Ser Lys Ala Val Glu Phe Gly Ile Glu Lys
225 230 235 240

Pro Thr Arg Val Glu Val Leu Thr Ala Phe Leu Ser Arg Cys Ala Thr
245 250 255

Val Ala Gly Lys Ser Ala Ala Lys Asn Asn Asn Cys Gly Gln Ser Leu
260 265 270

Pro Phe Pro Val Leu Gln Ala Ile Asn Leu Arg Pro Ile Leu Glu Leu
275 280 285

Pro Gln Asn Ser Val Gly Asn Leu Val Ser Ile Tyr Phe Ser Arg Thr
290 295 300

Ile Lys Glu Asn Asp Tyr Leu Asn Glu Lys Glu Tyr Thr Lys Leu Val
305 310 315 320

Ile Asn Glu Leu Arg Lys Glu Lys Gln Lys Ile Lys Asn Leu Ser Arg
325 330 335

Glu Lys Leu Thr Tyr Val Ala Gln Met Glu Glu Phe Val Lys Ser Leu
340 345 350

Lys Glu Phe Asp Ile Ser Asn Phe Leu Asp Ile Asp Ala Tyr Leu Ser
355 360 365

Asp Ser Trp Cys Arg Phe Pro Phe Tyr Asp Val Asp Phe Gly Trp Gly
370 375 380

Lys Pro Ile Trp Val Cys Leu Phe Gln Pro Tyr Ile Lys Asn Cys Val
385 390 395 400

Val Met Met Asp Tyr Pro Phe Gly Asp Asp Tyr Gly Ile Glu Ala Ile
405 410 415

Val Ser Phe Glu Gln Glu Lys Met Ser Ala Phe Glu Lys Asn Glu Gln
420 425 430

Leu Leu Gln Phe Val Ser Asn
435

<210> 69
<211> 451
<212> PRT
<213> Arabidopsis thaliana

<400> 69

Met Ala Pro Ile Thr Phe Arg Lys Ser Tyr Thr Ile Val Pro Ala Glu
1 5 10 15

Pro Thr Trp Ser Gly Arg Phe Pro Leu Ala Glu Trp Asp Gln Val Gly
20 25 30

Thr Ile Thr His Ile Pro Thr Leu Tyr Phe Tyr Asp Lys Pro Ser Glu
35 40 45

Ser Phe Gln Gly Asn Val Val Glu Ile Leu Lys Thr Ser Leu Ser Arg
50 55 60

Val Leu Val His Phe Tyr Pro Met Ala Gly Arg Leu Arg Trp Leu Pro
65 70 75 80

Arg Gly Arg Phe Glu Leu Asn Cys Asn Ala Glu Gly Val Glu Phe Ile
85 90 95

Glu Ala Glu Ser Glu Gly Lys Leu Ser Asp Phe Lys Asp Phe Ser Pro
100 105 110

Thr Pro Glu Phe Glu Asn Leu Met Pro Gln Val Asn Tyr Lys Asn Pro
115 120 125

Ile Glu Thr Ile Pro Leu Phe Leu Ala Gln Val Thr Lys Phe Lys Cys
130 135 140

Gly Gly Ile Ser Leu Ser Val Asn Val Ser His Ala Ile Val Asp Gly
145 150 155 160

Gln Ser Ala Leu His Leu Ile Ser Glu Trp Gly Arg Leu Ala Arg Gly
165 170 175

Glu Pro Leu Glu Thr Val Pro Phe Leu Asp Arg Lys Ile Leu Trp Ala
180 185 190

Gly Glu Pro Leu Pro Pro Phe Val Ser Pro Pro Lys Phe Asp His Lys
195 200 205

Glu Phe Asp Gln Pro Pro Phe Leu Ile Gly Glu Thr Asp Asn Val Glu
210 215 220

Glu Arg Lys Lys Lys Thr Ile Val Val Met Leu Pro Leu Ser Thr Ser
225 230 235 240

Gln Leu Gln Lys Leu Arg Ser Lys Ala Asn Gly Ser Lys His Ser Asp
245 250 255

Pro Ala Lys Gly Phe Thr Arg Tyr Glu Thr Val Thr Gly His Val Trp
260 265 270

Arg Cys Ala Cys Lys Ala Arg Gly His Ser Pro Glu Gln Pro Thr Ala
275 280 285

Leu Gly Ile Cys Ile Asp Thr Arg Ser Arg Met Glu Pro Pro Leu Pro
290 295 300

Arg Gly Tyr Phe Gly Asn Ala Thr Leu Asp Val Val Ala Ala Ser Thr
305 310 315 320

Ser Gly Glu Leu Ile Ser Asn Glu Leu Gly Phe Ala Ala Ser Leu Ile
325 330 335

Ser Lys Ala Ile Lys Asn Val Thr Asn Glu Tyr Val Met Ile Gly Ile
340 345 350

Glu Tyr Leu Lys Asn Gln Lys Asp Leu Lys Lys Phe Gln Asp Leu His
355 360 365

Ala Leu Gly Ser Thr Glu Gly Pro Phe Tyr Gly Asn Pro Asn Leu Gly
370 375 380

Val Val Ser Trp Leu Thr Leu Pro Met Tyr Gly Leu Asp Phe Gly Trp
385 390 395 400

Gly Lys Glu Phe Tyr Thr Gly Pro Gly Thr His Asp Phe Asp Gly Asp
405 410 415

Ser Leu Ile Leu Pro Asp Gln Asn Glu Asp Gly Ser Val Ile Leu Ala
420 425 430

Thr Cys Leu Gln Val Ala His Met Glu Ala Phe Lys Lys His Phe Tyr
435 440 445

Glu Asp Ile
450

<210> 70
<211> 461
<212> PRT
<213> Arabidopsis thaliana

<400> 70

Met Ala Asn Gln Arg Lys Pro Ile Leu Pro Leu Leu Leu Glu Lys Lys
1 5 10 15

Pro Val Glu Leu Val Lys Pro Ser Lys His Thr His Cys Glu Thr Leu
20 25 30

Ser Leu Ser Thr Leu Asp Asn Asp Pro Phe Asn Glu Val Met Tyr Ala
35 40 45

Thr Ile Tyr Val Phe Lys Ala Asn Gly Lys Asn Leu Asp Asp Pro Val
50 55 60

Ser Leu Leu Arg Lys Ala Leu Ser Glu Leu Leu Val His Tyr Tyr Pro
65 70 75 80

Leu Ser Gly Lys Leu Met Arg Ser Glu Ser Asn Gly Lys Leu Gln Leu
85 90 95

Val Tyr Leu Gly Glu Gly Val Pro Phe Glu Val Ala Thr Ser Thr Leu
100 105 110

Asp Leu Ser Ser Leu Asn Tyr Ile Glu Asn Leu Asp Asp Gln Val Ala

115 120 125

Leu Arg Leu Val Pro Glu Ile Glu Ile Asp Tyr Glu Ser Asn Val Cys
130 135 140

Tyr His Pro Leu Ala Leu Gln Val Thr Lys Phe Ala Cys Gly Gly Phe
145 150 155 160

Thr Ile Gly Thr Ala Leu Thr His Ala Val Cys Asp Gly Tyr Gly Val
165 170 175

Ala Gln Ile Ile His Ala Leu Thr Glu Leu Ala Ala Gly Lys Thr Glu
180 185 190

Pro Ser Val Lys Ser Val Trp Gln Arg Glu Arg Leu Val Gly Lys Ile
195 200 205

Asp Asn Lys Pro Gly Lys Val Pro Gly Ser His Ile Asp Gly Phe Leu
210 215 220

Ala Thr Ser Ala Tyr Leu Pro Thr Thr Asp Val Val Thr Glu Thr Ile
225 230 235 240

Asn Ile Arg Ala Gly Asp Ile Lys Arg Leu Lys Asp Ser Met Met Lys
245 250 255

Glu Cys Glu Tyr Leu Lys Glu Ser Phe Thr Thr Tyr Glu Val Leu Ser
260 265 270

Ser Tyr Ile Trp Lys Leu Arg Ser Arg Ala Leu Lys Leu Asn Pro Asp
275 280 285

Gly Ile Thr Val Leu Gly Val Ala Val Gly Ile Arg His Val Leu Asp
290 295 300

Pro Pro Leu Pro Lys Gly Tyr Tyr Gly Asn Ala Tyr Ile Asp Val Tyr
305 310 315 320

Val Glu Leu Thr Val Arg Glu Leu Glu Glu Ser Ser Ile Ser Asn Ile
325 330 335

Ala Asn Arg Val Lys Lys Ala Lys Lys Thr Ala Tyr Glu Lys Gly Tyr
340 345 350

Ile Glu Glu Glu Leu Lys Asn Thr Glu Arg Leu Met Arg Asp Asp Ser
355 360 365

Met Phe Glu Gly Val Ser Asp Gly Leu Phe Phe Leu Thr Asp Trp Arg
370 375 380

Asn Ile Gly Trp Phe Gly Ser Met Asp Phe Gly Trp Asn Glu Pro Val
385 390 395 400

Asn Leu Arg Pro Leu Thr Gln Arg Glu Ser Thr Val His Val Gly Met
405 410 415

Ile Leu Lys Pro Ser Lys Ser Asp Pro Ser Met Glu Gly Gly Val Lys
420 425 430

Val Ile Met Lys Leu Pro Arg Asp Ala Met Val Glu Phe Lys Arg Glu
435 440 445

Met Ala Thr Met Lys Lys Leu Tyr Phe Gly Asp Thr Asn
450 455 460

<210> 71
<211> 460
<212> PRT
<213> Nicotiana tabacum

<400> 71

Met Asp Ser Lys Gln Ser Ser Glu Leu Val Phe Thr Val Arg Arg Gln
1 5 10 15

Lys Pro Glu Leu Ile Ala Pro Ala Lys Pro Thr Pro Arg Glu Thr Lys
20 25 30

Phe Leu Ser Asp Ile Asp Asp Gln Glu Gly Leu Arg Phe Gln Ile Pro
35 40 45

Val Ile Gln Phe Tyr His Lys Asp Ser Ser Met Gly Arg Lys Asp Pro
50 55 60

Val Lys Val Ile Lys Lys Ala Ile Ala Glu Thr Leu Val Phe Tyr Tyr
65 70 75 80

Pro Phe Ala Gly Arg Leu Arg Glu Gly Asn Gly Arg Lys Leu Met Val
85 90 95

Asp Cys Thr Gly Glu Gly Ile Met Phe Val Glu Ala Asp Ala Asp Val
100 105 110

Thr Leu Glu Gln Phe Gly Asp Glu Leu Gln Pro Pro Phe Pro Cys Leu
115 120 125

Glu Glu Leu Leu Tyr Asp Val Pro Asp Ser Ala Gly Val Leu Asn Cys
130 135 140

Pro Leu Leu Leu Ile Gln Val Thr Arg Leu Arg Cys Gly Gly Phe Ile
145 150 155 160

Phe Ala Leu Arg Leu Asn His Thr Met Ser Asp Ala Pro Gly Leu Val
165 170 175

Gln Phe Met Thr Ala Val Gly Glu Met Ala Arg Gly Gly Ser Ala Pro
180 185 190

Ser Ile Leu Pro Val Trp Cys Arg Glu Leu Leu Asn Ala Arg Asn Pro
195 200 205

Pro Gln Val Thr Cys Thr His His Glu Tyr Asp Glu Val Arg Asp Thr
210 215 220

Lys Gly Thr Ile Ile Pro Leu Asp Asp Met Val His Lys Ser Phe Phe
225 230 235 240

Phe Gly Pro Ser Glu Val Ser Ala Leu Arg Arg Phe Val Pro His His
245 250 255

Leu Arg Lys Cys Ser Thr Phe Glu Leu Leu Thr Ala Val Leu Trp Arg
260 265 270

Cys Arg Thr Met Ser Leu Lys Pro Asp Pro Glu Glu Glu Val Arg Ala
275 280 285

Leu Cys Ile Val Asn Ala Arg Ser Arg Phe Asn Pro Pro Leu Pro Thr
290 295 300

Gly Tyr Tyr Gly Asn Ala Phe Ala Phe Pro Val Ala Val Thr Thr Ala

305 310 315 320

Ala Lys Leu Ser Lys Asn Pro Leu Gly Tyr Ala Leu Glu Leu Val Lys
325 330 335

Lys Thr Lys Ser Asp Val Thr Glu Glu Tyr Met Lys Ser Val Ala Asp
340 345 350

Leu Met Val Leu Lys Gly Arg Pro His Phe Thr Val Val Arg Thr Phe
355 360 365

Leu Val Ser Asp Val Thr Arg Gly Gly Phe Gly Glu Val Asp Phe Gly
370 375 380

Trp Gly Lys Ala Val Tyr Gly Gly Pro Ala Lys Gly Gly Val Gly Ala
385 390 395 400

Ile Pro Gly Val Ala Ser Phe Tyr Ile Pro Phe Lys Asn Lys Lys Gly
405 410 415

Glu Asn Gly Ile Val Val Pro Ile Cys Leu Pro Gly Phe Ala Met Glu
420 425 430

Thr Phe Val Lys Glu Leu Asp Gly Met Leu Lys Val Asp Ala Pro Leu
435 440 445

Val Asn Ser Asn Tyr Ala Ile Ile Arg Pro Ala Leu
450 455 460

<210> 72
<211> 455
<212> PRT
<213> Cucumis melo

<400> 72

Asp Phe Ser Phe His Val Arg Lys Cys Gln Pro Glu Leu Ile Ala Pro
1 5 10 15

Ala Asn Pro Thr Pro Tyr Glu Phe Lys Gln Leu Ser Asp Val Asp Asp
20 25 30

Gln Gln Ser Leu Arg Leu Gln Leu Pro Phe Val Asn Ile Tyr Pro His
35 40 45

Asn Pro Ser Leu Glu Gly Arg Asp Pro Val Lys Val Ile Lys Glu Ala
50 55 60

Ile Gly Lys Ala Leu Val Phe Tyr Tyr Pro Leu Ala Gly Arg Leu Arg
65 70 75 80

Glu Gly Pro Gly Arg Lys Leu Phe Val Glu Cys Thr Gly Glu Gly Ile
85 90 95

Leu Phe Ile Glu Ala Asp Ala Asp Val Ser Leu Glu Glu Phe Trp Asp
100 105 110

Thr Leu Pro Tyr Ser Leu Ser Ser Met Gln Asn Asn Ile Ile His Asn
115 120 125

Ala Leu Asn Ser Asp Glu Val Leu Asn Ser Pro Leu Leu Leu Ile Gln
130 135 140

Val Thr Arg Leu Lys Cys Gly Gly Phe Ile Phe Gly Leu Cys Phe Asn
145 150 155 160

His Thr Met Ala Asp Gly Phe Gly Ile Val Gln Phe Met Lys Ala Thr
165 170 175

Ala Glu Ile Ala Arg Gly Ala Phe Ala Pro Ser Ile Leu Pro Val Trp
180 185 190

Gln Arg Ala Leu Leu Thr Ala Arg Asp Pro Pro Arg Ile Thr Phe Arg
195 200 205

His Tyr Glu Tyr Asp Gln Val Val Asp Met Lys Ser Gly Leu Ile Pro
210 215 220

Val Asn Ser Lys Ile Asp Gln Leu Phe Phe Phe Ser Gln Leu Gln Ile
225 230 235 240

Ser Thr Leu Arg Gln Thr Leu Pro Ala His Leu His Asp Cys Pro Ser
245 250 255

Phe Glu Val Leu Thr Ala Tyr Val Trp Arg Leu Arg Thr Ile Ala Leu
260 265 270

Gln Phe Lys Pro Glu Glu Glu Val Arg Phe Leu Cys Val Met Asn Leu
275 280 285

Arg Ser Lys Ile Asp Ile Pro Leu Gly Tyr Tyr Gly Asn Ala Val Val
290 295 300

Val Pro Ala Val Ile Thr Thr Ala Ala Lys Leu Cys Gly Asn Pro Leu
305 310 315 320

Gly Tyr Ala Val Asp Leu Ile Arg Lys Ala Lys Ala Lys Ala Thr Met
325 330 335

Glu Tyr Ile Lys Ser Thr Val Asp Leu Met Val Ile Lys Gly Arg Pro
340 345 350

Tyr Phe Thr Val Val Gly Ser Phe Met Met Ser Asp Leu Thr Arg Ile
355 360 365

Gly Val Glu Asn Val Asp Phe Gly Trp Gly Lys Ala Ile Phe Gly Gly
370 375 380

Pro Thr Thr Thr Gly Ala Arg Ile Thr Arg Gly Leu Val Ser Phe Cys
385 390 395 400

Val Pro Phe Met Asn Arg Asn Gly Glu Lys Gly Thr Ala Leu Ser Leu
405 410 415

Cys Leu Pro Pro Pro Ala Met Glu Arg Phe Arg Ala Asn Val His Ala
420 425 430

Ser Leu Gln Val Lys Gln Val Val Asp Ala Val Asp Ser His Met Gln
435 440 445

Thr Ile Gln Ser Ala Ser Lys
450 455

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Thr Pro Asn Lys Ser Leu Trp Leu Ser Asn Ile Asp Met Ile Leu Arg
20 25 30

Thr Pro Tyr Ser His Thr Gly Ala Val Leu Ile Tyr Lys Gln Pro Asp
35 40 45

Asn Asn Glu Asp Asn Ile His Pro Ser Ser Ser Met Tyr Phe Asp Ala
50 55 60

Asn Ile Leu Ile Glu Ala Leu Ser Lys Ala Leu Val Pro Phe Tyr Pro
65 70 75 80

Met Ala Gly Arg Leu Lys Ile Asn Gly Asp Arg Tyr Glu Ile Asp Cys
85 90 95

Asn Ala Glu Gly Ala Leu Phe Val Glu Ala Glu Ser Ser His Val Leu
100 105 110

Glu Asp Phe Gly Asp Phe Arg Pro Asn Asp Glu Leu His Arg Val Met
115 120 125

Val Pro Thr Cys Asp Tyr Ser Lys Gly Ile Ser Ser Phe Pro Leu Leu
130 135 140

Met Val Gln Leu Thr Arg Phe Arg Cys Gly Gly Val Ser Ile Gly Phe
145 150 155 160

Ala Gln His His His Val Cys Asp Gly Met Ala His Phe Glu Phe Asn
165 170 175

Asn Ser Trp Ala Arg Ile Ala Lys Gly Leu Leu Pro Ala Leu Glu Pro
180 185 190

Val His Asp Arg Tyr Leu His Leu Arg Pro Arg Asn Pro Pro Gln Ile
195 200 205

Lys Tyr Ser His Ser Gln Phe Glu Pro Phe Val Pro Ser Leu Pro Asn
210 215 220

Glu Leu Leu Asp Gly Lys Thr Asn Lys Ser Gln Thr Leu Phe Ile Leu
225 230 235 240

Ser Arg Glu Gln Ile Asn Thr Leu Lys Gln Lys Leu Asp Leu Ser Asn
245 250 255

Asn Thr Thr Arg Leu Ser Thr Tyr Glu Val Val Ala Ala His Val Trp
260 265 270

Arg Ser Val Ser Lys Ala Arg Gly Leu Ser Asp His Glu Glu Ile Lys
275 280 285

Leu Ile Met Pro Val Asp Gly Arg Ser Arg Ile Asn Asn Pro Ser Leu
290 295 300

Pro Lys Gly Tyr Cys Gly Asn Val Val Phe Leu Ala Val Cys Thr Ala
305 310 315 320

Thr Val Gly Asp Leu Ser Cys Asn Pro Leu Thr Asp Thr Ala Gly Lys
325 330 335

Val Gln Glu Ala Leu Lys Gly Leu Asp Asp Asp Tyr Leu Arg Ser Ala
340 345 350

Ile Asp His Thr Glu Ser Lys Pro Gly Leu Pro Val Pro Tyr Met Gly
355 360 365

Ser Pro Glu Lys Thr Leu Tyr Pro Asn Val Leu Val Asn Ser Trp Gly
370 375 380

Arg Ile Pro Tyr Gln Ala Met Asp Phe Gly Trp Gly Ser Pro Thr Phe
385 390 395 400

Phe Gly Ile Ser Asn Ile Phe Tyr Asp Gly Gln Cys Phe Leu Ile Pro
405 410 415

Ser Arg Asp Gly Asp Gly Ser Met Thr Leu Ala Ile Asn Leu Phe Ser
420 425 430

Ser His Leu Ser Arg Phe Lys Lys Tyr Phe Tyr Asp Phe
435 440 445

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Lys Pro Ser Ser Pro Thr Pro Asn Asn Leu Gln Thr Leu Gln Leu Ser
            20                  25                  30

Ile Tyr Asp His Ile Leu Pro Pro Val Tyr Thr Val Ala Phe Leu Phe
        35                  40                  45

Tyr Thr Lys Asn Asp Leu Ile Ser Gln Glu His Thr Ser His Lys Leu
    50                  55                  60

Lys Thr Ser Leu Ser Glu Thr Leu Thr Lys Phe Tyr Pro Leu Ala Gly
65                  70                  75                  80

Arg Ile Thr Gly Val Thr Val Asp Cys Thr Asp Glu Gly Ala Ile Phe
                85                  90                  95

Val Asp Ala Arg Val Asn Asn Cys Pro Leu Thr Glu Phe Leu Lys Cys
            100                 105                 110

Pro Asp Phe Asp Ala Leu Gln Gln Leu Leu Pro Leu Asp Val Val Asp
        115                 120                 125

Asn Pro Tyr Val Ala Ala Ala Thr Trp Pro Leu Leu Leu Val Lys Ala
    130                 135                 140

Thr Tyr Phe Gly Cys Gly Gly Met Ala Ile Gly Ile Cys Ile Thr His
145                 150                 155                 160

Lys Ile Ala Asp Ala Ala Ser Ile Ser Thr Phe Ile Arg Ser Trp Ala
                165                 170                 175

Ala Thr Ala Arg Gly Glu Asn Asp Ala Ala Ala Met Glu Ser Pro Val
            180                 185                 190

Phe Ala Gly Ala Asn Phe Tyr Pro Pro Ala Asn Glu Ala Phe Lys Leu
        195                 200                 205

Pro Ala Asp Glu Gln Ala Gly Lys Arg Ser Ser Ile Thr Lys Arg Phe
    210                 215                 220
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Val Phe Glu Ala Ser Lys Val Glu Asp Leu Arg Thr Lys Ala Ala Ser
225 230 235 240

Glu Glu Thr Val Asp Gln Pro Thr Arg Val Glu Ser Val Thr Ala Leu
245 250 255

Ile Trp Lys Cys Phe Val Ala Ser Ser Lys Thr Thr Thr Cys Asp His
260 265 270

Lys Val Leu Val Gln Leu Ala Asn Leu Arg Ser Lys Ile Pro Ser Leu
275 280 285

Leu Gln Glu Ser Ser Ile Gly Asn Leu Met Phe Ser Ser Val Val Leu
290 295 300

Ser Ile Gly Arg Gly Gly Glu Val Lys Ile Glu Glu Ala Val Arg Asp
305 310 315 320

Leu Arg Lys Lys Lys Glu Glu Leu Gly Thr Val Ile Leu Asp Glu Gly
325 330 335

Gly Ser Ser Asp Ser Ser Ser Met Ile Gly Ser Lys Leu Ala Asn Leu
340 345 350

Met Leu Thr Asn Tyr Ser Arg Leu Ser Tyr Glu Thr His Glu Pro Tyr
355 360 365

Thr Val Ser Ser Trp Cys Lys Leu Pro Leu Tyr Glu Ala Ser Phe Gly
370 375 380

Trp Asp Ser Pro Val Trp Val Val Gly Asn Val Ser Pro Val Leu Gly
385 390 395 400

Asn Leu Ala Met Leu Ile Asp Ser Lys Asp Gly Gln Gly Ile Glu Ala
405 410 415

Phe Val Thr Leu Pro Glu Glu Asn Met Ser Ser Phe Glu Gln Asn Pro
420 425 430

Glu Leu Leu Ala Phe Ala Thr Met Asn Pro Ser Val Leu Val
435 440 445